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SPECIAL ARTICLE

THE PRESENT STATUS OF ELECTROCARDIOGRAPHY IN THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF HEART DISEASE

By WILLIAM J. KERR, M. D., *San Francisco*

HISTORICAL.
The normal electrocardiogram.

Value of electrocardiogram in diagnosis. Some of the abuses of the method.

Recognition of disordered mechanisms of the heart without the aid of graphic methods is possible in most instances.

Conditions which are shown only by the electrocardiographic method.

Value in prognosis and treatment must await further study and experimental work.

The ultimate goal is to learn what the instrument may teach us and then to dispense with its use for routine work.

THE credit for the introduction of the string galvanometer into the field of clinical medicine should be given to Einthoven. Long before his time Matteuci (1843) had discovered that electromotive force emanated from the heart itself. This was confirmed in 1849 by DuBois Reymond by the use of a very delicate galvanometer. Further confirmation came independently by Kölliker and Remak in 1850. Müller and Kölliker showed later (1850-1856) that a special current was developed in the auricles during their contraction. The invention of the capillary electrometer by Lippmann in 1873 led to the construction of the hypersensitive capillary electrometer. Waller, in 1887, suggested that there was a ratio between the contracting force of certain heart muscles and the current that emanates from them. The Ader registration machine or recorder, described in 1887 and used for submarine cable work, consisted of a long vertical wire stretched in a magnetic field. Current was passed through the wire, which was drawn from side to side by the poles of the magnet, while a ray of light from a lamp threw a shadow of a minute portion of the moving wire on a moving strip of photographic paper in the form of an undulating dotted line. Einthoven's invention is an adaptation of this instrument to the study of heart disease, and, as originally constructed, has remained the standard instrument for clinical work.

Einthoven's instrument makes use of a delicate silvered quartz filament or fiber which can scarcely be seen by the unaided eye. It is suspended between the poles of a powerful electro-magnet. Any current passing through the conducting filament, which is placed in a magnetic field at right angles to the magnetic current, causes the filament to oscillate forward and backward according to the ascent or descent of the current. The amount of oscillation depends upon the strength of the magnetic field, the strength of the action current and the resistance in the filament. The movements of the filament, activated by cardiac action, are recorded by projecting its shadow, magnified by a high-power microscope, on a moving photographic plate or film. The time interval is recorded by photographing the shadow of a rotating spoked wheel activated by a tuning fork. The electromagnets are fed by an accumulator battery. The source of light was originally provided by a powerful arc lamp with a water chamber interposed to prevent injury to the filament. Many clinicians today employ an incandescent lamp (Point-O-Lite), which gives a constant beam of brilliant light. The action current originates at the heart and is drawn off by non-polarizable electrodes, placed on convenient and suitable parts of the body. Several types have been devised, but the one described by Cohn, and perhaps the most suitable, consists of a sheet of lead foil 7.5 cm. wide by 22 cm. long and covered by a strip of rubber sheet 9 cm. wide by 30 cm. long. The strips are fastened together near one end by a brass screw which carries the binding post. Warm salt solution is used as the electrolyte. The electrode is applied over gauze soaked in the solution after preparing the skin, to provide satisfactory contact. The current passing through the filament represents, not only the cardiac action currents, but also the difference of potential between the parts of the body to which the electrodes are applied.

In the body there are action currents of other tissues besides the heart muscle which produce variations in the potential. To offset this, a battery current is introduced which neutralizes this so-called skin current. The tension on the filament is adjusted so that each millivolt of current causes an excursion of one centimeter on the plate. This is the Einthoven standard for comparison, which is generally used in clinical work.

Briefly, then, the complete apparatus consists of (1) a string galvanometer, including an achromatic

microscope; (2) a constant source of brilliant light; (3) non-polarizable electrodes; (4) an accumulator battery for the magnetic field; (5) an apparatus for testing the susceptibility of the galvanometer; (6) an apparatus for compensating the "skin current"; (7) a photo-registering apparatus; (8) time-marking apparatus.

Electrodes are usually applied at three points, namely, right and left wrists and left calf. By a combination of these in pairs, we derive the three leads which are related to the action currents in different parts of the heart muscle, and the differences in potential established between the connections at the extremities. Thus:

Right arm and left arm constitute lead I.
Right arm and left leg constitute lead II.
Left arm and left leg constitute lead III.

From these leads the direction, amplitude, and time of the cardiac action currents can be expressed graphically, and a study of these constitute *electrocardiography*.

While the apparatus and its operation appears complicated in description, little difficulty is encountered in acquiring the necessary technical skill for manipulation. Greater skill and study are necessary in interpreting the three curves or leads which constitute the *electrocardiogram*. The *normal electrocardiogram* consists of a series of deflections which are associated with the events of a cardiac cycle, beginning with the origin of the impulse at the sino-auricular node and traversing the auricle, auriculo-ventricular node, ventricular conduction system and ventricular muscle and resulting in contraction. The deflections apparently result from electrical changes accompanying conduction of the impulse and contraction of the muscle. The deflections or waves are grouped according to their occurrence in the cycle; thus P waves are associated with auricular activity and the Q, R, S, and T waves accompany ventricular activity. The electrical changes in the heart precede the actual contraction of the muscle by a brief period. It is not necessary to go into the controversies which were waged about the causation of the different deflections in the normal cardiac cycle. Experimental work is helping to clear up many of the debated points. The final phase, known as the T wave, is the least well-understood deflection of the normal electrocardiogram. The original work of Einthoven (1900-1907), the subsequent studies of Frank and Hess, Eppinger and Rothberger, Kahn, Hoffman, Barker, Kraus and Nicolai, Eyster and Meek, and the brilliant researches of Lewis and his associates, laid the foundations for our present knowledge of the electrocardiogram in health and disease. Since 1910 the literature dealing with electrocardiographic studies has assumed voluminous proportions. A list of the more important contributions is appended. The recent studies have dealt largely with the applications of electrocardiography in diagnosis, prognosis, and treatment.

There can be no question but that the introduction of the electrocardiograph into experimental and clinical medicine has cleared up much of the confusion about the heart. These correlated studies shall serve for all time as one of the most brilliant applications of experimental physiology to clinical medicine. The cardiac irregularities, one by one, have been studied and described. Heart-block, which was fairly well understood by experimental studies and clinical observations with the polygraph, has been further clarified by electrocardiographic work. This is particularly true of blocking of impulses or defective conduction in the bundle of His, its branches and its arborizations in the ventricles. In the course of extensive studies, the limitations of assistance which we may secure from the electrocardiographic method have been delineated. There are patients who are suffering from obvious cardiac failure who show no deviations from the normal so far as the electrocardiogram is concerned. Patients with extensive valvular disease may show normal electrocardiograms. Some of the more severe cardiac manifestations, such as pulsus alternans, which are demonstrable by the polygraphic or spygnomanometric methods are shown only rarely on the electrocardiogram. However, in such cases the T waves frequently show abnormalities which have come to be associated with grave cardiac disorders.

VALUE IN DIAGNOSIS

At the outset it should be stated that one who is skilled in electrocardiography and has carefully studied the associated clinical manifestations of disordered action of the heart seldom needs to make use of the electrocardiographic method in diagnosis. This has been made possible by the brilliant observations of Mackenzie and others with the polygraph, and extensive studies by Lewis and numerous physiologists and clinicians with the electrocardiograph. Such a state of affairs does not necessarily condemn the electrocardiographic method as having no place in clinical medicine. Nor does it mean that such an instrument should be restricted to the research laboratories and the medical schools. The ultimate goal in the use of all instruments of precision, as Mackenzie and others have maintained, is to dispense with their use when we have learned all that they may teach us. This stage, however, has not been reached with the electrocardiograph in diagnosis and less so in prognosis and treatment.

Practically all Class A medical schools are today providing some training in the interpretation of electrocardiograms. An increasing amount of instruction is being given in the methods by which disordered mechanisms may be recognized, without instrumental aid. This is highly desirable for those who are entering general practice and may not be able, for many reasons, to carry on their instruction in graphic methods at the bedside. The polygraph, which is portable, may replace the electrocardiograph to some extent, and should be a part of the armamentarium of those doing internal medicine. Some provision must be made for those physicians who have not been instructed in instrumental methods or the interpretation of the findings and the clinical symptoms and signs which they present in the patient. A considerable proportion of patients who are sent for electrocardiographic study present normal variations or simple irregularities which could be readily recognized by the clinician. The patients with such disorders should be spared the expense and the fear that they are suffering from heart disease.

At times the reassurance that may come from the graphic registration and demonstration of a normal or inconsequential finding may be of value in dealing with certain types of patients, but this is seldom necessary for the able clinician.

Experience has repeatedly shown that clinicians should seldom rely on laboratory findings for the diagnosis in any given case. This is also true of the results which may be obtained with the so-called instruments of precision. In rare instances instrumental methods may reveal unsuspected conditions. In general, however, there are symptoms or signs which reveal to the careful observer the true nature of the disorder. Although electrocardiography has helped to place our present knowledge of cardiac disease on a firmer basis, we should not lean too heavily on the results it may show. There are times when we may be misled by normal electrocardiographic findings when the patient is shown to have obvious heart failure. On the other hand, we may err in assigning a grave prognosis in a case where the electrocardiogram shows extensive damage of the heart. It should be remembered that the prognostic significance of certain abnormalities is drawn from average experience, based on statistics subject to wide individual variations.

There are certain normal variations of the electrocardiogram which must be kept in mind. The shape of the curves in the three leads is constant for the individual for long periods of time, barring disease, and may, therefore, be of value in identification. The shape complexes may vary with respiration or changes in position of the heart, produced by displacements, etc. In the case of complete transposition of the viscera, the complexes in Lead I are inverted. None of these call for electrocardiographic confirmation, although they must be borne in mind in interpreting the graphic records.

Inasmuch as the ultimate goal in medicine is to dispense with instrumental aid, when we have learned all that it may be able to teach us, it would be advisable to attempt an exposition of the conditions where such aid is and is not necessary. In the paragraphs which follow, an effort will be made to show the present status of electrocardiography as an asset in clinical medicine. Simple methods of detecting disorders of the heart which require only sight, hearing and touch will be suggested.

The *irregularities* of the heart often confound the physician. The commonest of these is *sinus arrhythmia,* which is of frequent occurrence in children and young adults. Usually the variation in rhythm is associated with respiration, with an increase of rate during inspiration and a slowing during expiration. A deep breath, held, will often cause a marked slowing of the heart. Exercise or anything which speeds up the heart tends to eliminate the irregularity. A study of the jugular pulse in the neck usually shows the three normal waves. This irregularity is of no clinical significance, can usually be differentiated without instrumental means, and yet is frequently mistaken for a serious disorder. Extrasystoles may be associated and suggest auricular fibrillation. *Sino-auricular tachycardia* is a simple tachycardia associated with exercise, febrile and toxic conditions, and is usually regarded in its proper light. *Sino-auricular bradycardia* with a rate of 50-60 may be a normal finding to confuse with heart-block. A study of the jugular pulse and a general examination of the patient will usually make the diagnosis. *Extrasystoles,* ectopic beats, or premature beats are also common, especially in young people, and usually have no great significance. They are often attributed to toxic influences or irritations arising outside the heart. In persons past middle life they are often associated with more general cardiac disease, and when arising from multiple foci, or when followed by alternation of the pulse, have more serious significance. When associated with muscle damage they may be forerunners of the tachycardias, such as auricular fibrillation, auricular flutter, or others. Extrasystoles arising in the auricles usually alter the rhythm of the heart, the new rhythm taking its time from the time of the inception of the extrasystole. Those arising in the ventricle usually do not disturb the underlying rhythm which takes its time interval from the last normal beat preceding the extrasystole. Extrasystoles may rarely be interpolated; that is, may fall between two normal beats without altering the rhythm. By listening to the heart, the extrasystole can usually be detected, which may not give rise to a perceptible pulsation at the wrist. This should be differentiated from dropped beats which belong properly under heart-block. By carrying the time with the foot, the changes in the underlying rhythm may be studied. By watching the jugular pulse in the neck, the presence or absence of the "A" wave may help to differentiate an auricular from a ventricular extrasystole. Extrasystoles frequently come in a definite sequence; that is, every second, third, fourth beat, and so on. If so, we may have a pulse at the wrist suggesting alternation, a bigeminal pulse, a trigeminal pulse, and so on. Exercise or anything which will increase the rate of the heart usually causes extrasystoles to disappear and give way temporarily to a regular rhythm. If the myocardium is severely damaged, extrasystoles may be increased by exercise. Electrocardiograms are of value in localizing the point of origin of extrasystoles and, when arising from multiple foci, would speak for grave disturbances. Multiple ventricular extrasystoles, associated with defective conductivity, may be forerunners of ventricular tachycardia and ventricular fibrillation, and indicate a bad prognosis. Chloroform anesthesia would be contra-indicated. Adrenalin should not be administered alone or in conjunction with chloroform anesthesia. By a careful study of the patient, the type and seriousness of extrasystoles can usually be determined. *Nodal rhythm,* where the impulse arises at the auriculo-ventricular node and passes in both directions, causes marked disturbance in the cardiac mechanism. Such a rhythm may be detected by a study of the jugular pulse. The rhythm is usually regular and rapid, but may be slow. The "A" wave in the jugular pulse may be present, coming close to the "C" wave, or may be submerged in it. The electrocardiogram gives a clear interpretation of this disorder, showing the site of origin of the impulse in the junctional tissues.

One of the commonest irregularities is *auricular fibrillation.* An electrocardiogram is seldom required to diagnose this condition. The absolutely irregular

rhythm, variation in force and volume, generally rapid rate (90-160), deficit between apex and pulse rate, absence of regular "A" waves in the jugular pulse, increase of the irregularity and breathlessness with exercise, and response to digitalis or quinidine differentiate this irregularity from others. A fibrillation, where partial or complete block is present, may be confusing. An auricular flutter, if showing an irregular ventricular rhythm, may simulate auricular fibrillation, but usually an underlying rhythm will be detected. Auricular fibrillation with slow undulating fibrillary auricular waves in the jugular pulse may suggest auricular flutter. The electrocardiogram is an aid in diagnosing these borderline conditions and in assessing the associated myocardial damage when taken in conjunction with the general clinical picture. With auricular fibrillation there is usually associated valvular or degenerative disease or toxic conditions, such as thyroid disease.

Auricular flutter, which is closely allied to auricular fibrillation, usually has a ventricular rate of 90 to 150, but may be above or below this rate. The rhythm is usually regular, but may be irregular. The auricles are usually beating about 300 times per minute and the ventricles fail to respond to each second, third or fourth beat because some of the ectopic impulses are blocked after passing through the auricles. The clinical symptoms are usually pronounced. The heart-sounds suggest a recurring irregularity or may be regular. The jugular pulse shows rapid regular "A" waves at about 300 per minute, with superimposed "C" and "V" waves. Vagal pressure usually causes a marked slowing of the ventricular rate when the "A" waves in the opposite jugular may be clearly noted. Exercise may increase the block and slow the ventricular rate. Quinine derivatives apparently have little effect on auricular flutter, but ample doses of digitalis may bring about auricular fibrillation which may then change to a regular rhythm if digitalis is withdrawn. Electrocardiograms are useful in exact diagnosis of the irregularity and in estimating the general muscle damage. Mitral disease and degenerative myocardial diseases are frequently associated. *Auricular tachycardia,* which is usually paroxysmal in type, generally shows a rate of 160-280 per minute. The impulses arising outside the pacemaker at the sinus take the center of the stage for a time and the heart beats rapidly and regularly. The clinical symptoms are generally marked, leading to anxiety on the part of the patient, family, and physician. Nothing can be determined at the heart except the rapid rate and regular rhythm. The jugular veins are distended and distinct waves are not easily made out. Anything which stimulates the vagus nerves may terminate the attack, in which case the regular, normal rhythm may be resumed in a spectacular manner. Quinidine by mouth or quinine intravenously may cause prompt cessation of the attack, which in itself is rarely fatal.

Any one of the disorders, namely, auricular fibrillation, auricular flutter and auricular tachycardia, may be paroxysmal in nature and, as such, probably constitute many attacks of *true palpitation* described by patients. Inasmuch as the attacks terminate promptly in a great majority of cases, clinicians should be able to differentiate them without the aid of instruments because of the divergent prognostic and therapeutic features. Electrocardiograms show the location of the abnormal pacemaker in the latter two conditions.

Ventricular tachycardia is less common than auricular tachycardia, usually paroxysmal, and is a grave condition, occurring more often in extensive myocardial disease such as seen with coronary occlusion. The disordered rhythm with rapid rate and general condition of the patient leave little doubt in the mind of the clinician of the seriousness of the patient's malady. This condition probably precedes *ventricular fibrillation* which, if permanent, is not compatible with life. In both of these conditions, electrocardiograms are of value in instruction to complete the list of possibilities.

Heart-block may be noted in a variety of forms. *Sino-auricular* block is comparatively rare, where overstimulation of the vagus may cause the entire heart to stand still. Upon listening to the heart, no sounds would be heard and there would be no pulsations in the neck during the pause. This form should be differentiated from complete auriculo-ventricular block where the auricles continue to beat. Electrocardiograms may be necessary to aid in the decision. *Delayed conduction time* usually precedes the more severe forms of heart-block. The impulse from the pacemaker is delayed in its course from the auricle to the ventricles. A study of the jugular pulse will usually show that the "A" wave precedes the "C" wave by an interval greater than normal. Pressure on the vagus may increase the block. In many cases there are also dropped beats, where the ventricle fails to respond to an impulse coming from the auricles. The pause, indicating absence of ventricular contractions, may be detected by auscultation at the apex and noted in the jugular pulse. The pauses may occur rhythmically, tending to confuse with extrasystoles. An electrocardiogram is seldom necessary to differentiate, but is of value in showing the associated changes in the ventricular muscle. *Complete heart-block* may be permanent or paroxysmal in nature, as is seen in Adams-Stokes syndrome. The ventricles are usually beating at a rate of 20-50, but may show wider variations. The auricles are usually regular, but may show auricular fibrillation or flutter or other irregularities. There is no association between the rhythms in the upper and lower chambers of the heart. If the ventricular rate is slow, the auricles may be heard beating at a more rapid rate at the base of the heart. The jugular pulse usually shows the independent rhythm of the auricles; and there is usually evidence of degenerative disease in the heart. Syphilis, acute infections, and congenital lesions may be concomitant. By a careful study of the clinical findings, instrumental aids are not often necessary to decide as to the existence of complete heart-block. The original descriptions of Stokes and Adams are examples of the value of careful clinical observation. The blocking of impulses, which may occur in the bundles of His and its branches, and arborizations produce electrocardiograms which are, as yet, the least understood of all the abnormal mechanisms. The lesions which bring about such changes in the conductivity and contrac-

tility of heart muscles are often diffuse and variable, and the electrocardiograms produced thereby differ from characteristic curves shown by experimental study. We may not be able to demonstrate histologically the lesion which produces a given abnormality in the electrocardiogram. Clinically, we are not able to differentiate between a blocked impulse in the right or left branch of the bundle of His, nor are we able to state definitely that there is widespread interference with the impulse around the papillary muscles or beyond in the ventricular walls. The electrocardiographic method is invaluable in estimating the significance of some of these grave disturbances. The interference of the conduction of the impulse in the ventricles will be shown. The shape and duration of the "Q, R, S" complex and the shape and deviation of the "T" wave will give us an idea of the extent of damage. The general condition of the patient may suggest a grave cardiac condition. The poor quality of the first sound or the split first sound at the apex of the heart may be the only abnormality noted on general examination. Pulsus alternans may be noted when taking systolic blood-pressure readings and rarely by feeling the radial pulse in marked cases. Polygraphic tracings may reveal constant alternation or only after extrasystoles in such cases, and would be a help in diagnosis and prognosis.

The nature of *pulsus alternans* is not fully understood, but of its seriousness there can be no doubt. This is one condition where the electrocardiographic method gives us very little help, unless we can show changes in the ventricular complex which, in themselves, are known to be of equal seriousness and significance.

In *irritable heart,* strong respiratory cyclic oscillation of the electrical axis with sinus arrhythmia may be of assistance in making the diagnosis.

Relative *hypertrophy* or *preponderance* of one side of the heart over the other may be shown by the electrocardiographic method. The findings may be of value in a study of congenital or valvular heart disease, hypertension, and nephritis, but should be used only in conjunction with the general clinical and roentgenographic findings. Changes in the "P" waves may indicate unequal hypertrophy of the auricles.

In considering the disordered mechanisms of the heart from a diagnostic standpoint, it should be kept in mind that combinations may occur which make accurate diagnosis almost impossible without the assistance which the electrocardiograph may render.

VALUE IN PROGNOSIS

The electrocardiographic method has proven of great value in prognosis. This is largely due to the fact that recognition and classification of disordered mechanisms by this method enabled us to study the various groups over a period of years. Apparently, all the possible cardiac disturbances have been observed experimentally and clinically. As a general rule, individuals who show multiple disturbances in the normal cardiac mechanism, as shown electrocardiographically, have a grave prognosis. Those who show simple extrasystoles or sinus arrhythmia have an excellent prognosis. Paroxysmal auricular tachycardia is usually not of a serious nature. Auricular fibrillation is often paroxysmal and not serious, but when permanent is usually attended by increasing disability because of the frequent association with a failing heart muscle. Auricular flutter parallels auricular fibrillation. The finding of bundle-branch block or arborization block, which may be shown only by the electrocardiogram, usually indicates a grave prognosis unless syphilis be the etiological factor. Changes in the "T" wave, especially inversion of the "T" wave in Lead I, Leads I and II, or Leads I, II, and III combined, are known to be of serious prognostic significance, providing digitalis has not been recently administered. Ventricular tachycardia and ventricular fibrillation, which can be definitely diagnosed only with the electrocardiograph, are grave conditions, the latter usually being observed only in the dying heart.

VALUE IN TREATMENT

As in prognosis, the value of the electrocardiographic method in treatment of heart disease is still in the academic and developmental stage. The action of certain drugs like digitalis, strophanthin, quinine derivatives, arsenicals, atropine, physostygmine, adrenalin, potassium salts, muscarine, aconotive, and others is being better understood because of careful experimental and clinical electrocardiographic studies. The effect of digitalis on the "T" wave may be studied during treatment to insure the desired therapeutic effects, or the observations may be used as a method of standardizing the drug. Before giving quinidine to restore a fibrillating auricle to a normal rhythm, it is well to know something about the ventricular muscle. If the patient is suffering from extensive myocardial damage and congestive heart failure, it would be unwise to proceed with such treatment until the congestion had been cleared up with rest, depletion, restriction of fluids, and digitalis. It would probably be unwise to employ quinidine if the heart muscle shows extensive damage. The electrocardiogram would be of value in making our final decision about treatment. In heart-block due to syphilis, the progress of the treatment with arsenicals and iodides can be readily shown by electrocardiograms. Patients with heart-block who are taking atropine may have the progress of treatment carefully checked by this method. As time goes on, no doubt other avenues of study with the electrocardiograph in therapeutics will be revealed and older methods will be abandoned as a better clinical understanding is established.

SUMMARY

The electrocardiographic method has served a useful purpose in clearing up much of the mystery concerning disordered mechanisms of the heart. The close parallelism between experimental and clinical observations affords the most brilliant example of applied physiology up to this time.

The electrocardiograph, with such modifications as may be made, will remain an instrument of great value to the investigator. Its permanent place in medical education is assured, for study and research

and in the instruction of successive classes of students.

All medical students should be taught the interpretation of the commoner types of electrocardiograms, and they should be instructed to recognize most of the disordered mechanisms of the heart without the aid of any instrument of precision.

Practitioners who have not had the advantage of instruction in the use of the instrument and what it reveals should make an effort to learn the commoner types of abnormalities. Polygraphic study will be of assistance if an electrocardiograph is not available.

The electrocardiogram serves as a permanent record for comparison and study.

The value of the electrocardiographic method in prognosis and treatment is great, but will not be fully realized for many years to come.

Finally, it should be remembered that the electrocardiographic method is an aid in clinical medicine to confirm the findings of the physicians, and to stimulate him towards improved methods of observation.

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Serologic Significance of Streptococci in Arthritis and Allied Conditions—In using active serum, R. Burbank and L. G. Hadjopoulos, New York (Journal A. M. A.), have developed a technic for bacterial fixations, in the main of the streptococcus types, whereby various arthritic and rheumatoid conditions may be classified serologically into three major groups: Arthritis reacting to hemolytic streptococci and belonging to the iso-atrophic class. This type in pure form is periarticular. Arthritis reacting similarly to hemolytic streptococci, but of different fixing properties. This type is aniso-atrophic or deformans. Arthritis reacting to streptococci of the S. viridans type and belonging to the ostearthritic or productive form. The bony change is often a very early manifestation in this group, and is demonstrated by crepitus and by roentgen ray. The majority of arthritic cases that are not arrested or cured early in the course of the disease have a tendency to undergo further changes leading to mixed types. Thus, in an acute exudative periarthritis or in an arthritis deformans, the bony parts gradually may become involved and give rise to a mixed serologic picture. Similarly, in a chronic productive arthritic case, acute tonsillitis, or some other hemolytic infection may engraft a synovial (hemolytic) flare-up on a chronic hypertrophic joint. A fair percentage of arthritic patients, especially those suffering from colitis and chronic constipation, have a marked tendency to effect complement fixation in certain strains of non-hemolytic streptococci isolated from the intestinal tract of similar arthritic cases. This type of organism seems to be a transition form of streptococcus hemolyticus, with certain properties lost through secondary intestinal implantation. Certain pathologic conditions have long been known clinically to be precursors of arthritis. Serologically, we have confirmed these clinical observations. In controlling the value of the test in normal cases, the possibility of the presence of some masked focus of infection must be considered. With this point in mind, the test is not diagnostic for arthritis alone, but is diagnostic of a wide group of acute and chronic infections that give rise to anti-streptococcic bodies in human serums.

CONDITIONS, ESPECIALLY PREVIOUS PATHOLOGICAL CONDITIONS, WHICH INTERFERE WITH RESULTS IN INDUSTRIAL INJURIES

By S. J. HUNKIN, M. D., *San Francisco*

Previous conditions, arising out of earlier injuries or already existing diseases, may and often do materially modify results obtained after industrial injuries. Outside of osteo-arthritis and probably the major fraction of even this, the most important cause for previously existent structural pathology of the working man, lies in the long continued exposure to the elements, the faulty, ofttimes necessary, positions, the frequently repeated minor injuries occurring perhaps over a great many years.

The last accident is ofttimes not the one important factor in the disability.

DISCUSSION *by J. Rollin French, Los Angeles; J. L. Pritchard, San Jose; Frank M. Mikels, Long Beach.*

A PATIENT, beneficiary under the Industrial Accident law, came to see me regarding some patches of eczema on his right lower leg which, he alleged, came from a plaster splint applied by me more than a year and a half before and for which he claimed compensation. He exhibited several patches of a weeping eczema on his right lower leg. I had examined this man on an average of once a week for many months up to some two or three weeks previously, and knew during this time he had no suggestion of eczema. While examining the leg, I noticed a stain on the other stocking and asked him if he had any eczema on the left leg. He denied the allegation, but when I pulled down the other stocking, I found a patch of eczema about as big as a silver dollar. This particular patient came under my observation about one and a half years ago with a mal-posed fibrous union fracture of the upper right femur. We noted at that time a deformity just below the right knee which he said was from an old fracture. We also noted a mal-united overlapping fracture of both bones of the lower third of the right leg which he said dated from a fracture some fifteen to eighteen years ago. At the time he came under my observation he had a peculiar tumorous growth around this mal-united fracture which had given rise to the suspicion of sarcoma. He has made a very good recovery; has good union, although radiographically the recession of the old tumor suggests a duplication of the repaired shaft; he has practically normal motion in the hip-joint; and has a flexion of from 115 to 120 degrees in the knee, with a shortening of between two and three centimeters. He now claims compensation for lessened motion in the knee, a shortened leg, and an eczema of one leg (having it on both), all as a result of the last accident. It is apparent to any man having experience with fractures that the previously existent overlapping fractures in two places must of necessity have given a shortening probably equal to what he at present has. It is also evident that a fracture with deformity within a centimeter or two of the knee would lessen the motion of that knee in some degree. I shall be interested in what compensation will be given. All of you who deal with such cases must have an idea of how much his present disability, including the eczema on one leg, is due to the accident in question, and must ask yourselves "how much did the previous pathology modify the result obtained after the last accident."

At present there are under my observation two men, the conditions of whom are closely similar: the one a state compensation case, and the other drawing compensation from another insurance company. Each one received a minor injury to the heel—I say minor because good and repeated radiograms, before they came under my observation and afterwards, disclosed no evidence of injury. They both present spurs and inflamed bursae. Both show definite arterial vascular changes, and the one has a Wassermann XXX. The one has lues with a probable Neisser symbiosis, and the other has a definite Neisser with a probable spirochete symbiosis. Similar injuries sustained by a normal individual would probably have caused soreness, possibly a little lameness for a few days—at the outside say for two or three weeks. In both of these cases the motions of the ankle-joint and tarsus are practically normal; yet each man complains of pain, marked disability out of all proportion to the evident pathology, and both are definitely intent upon getting a life ticket upon the insurance funds. One of them, the positive Wassermann man, has lately claimed extra compensation because of trouble with the other foot, and suggested "beginning ventral hernia." Beyond doubt, in these cases the injury plays only a very minor role and certainly is not responsible for more than a minor fraction of the disability claimed. The worst feature about such cases is that some members of our profession help them in their pretensions, by seriously considering and detailing symptoms which they admit have neither pathological nor structural basis, but honestly argue that "their need is great"; that "the employer takes them as he finds them"; and that "the insurance company has plenty of money and takes premiums on that premise." As I see it, charity, the saving virtue, has as its only limit and only requirement the need therefor. Compensation, on the other hand, is not charity and must be considered solely as giving "pro for quod." Compensation is paid for and the insurer seeks nothing, but demands only what has been paid for. The need of the sufferer, the richness of the company plays no part. The employer does not "take the employe as he finds him," as I see it: he ofttimes does not take him at all, but has him thrust upon him, and at times has a well-known lame duck sneaked upon him. I have known a strike called and later called off on account of certain men, it being well known to me—and, of course, to many others—that these particular individuals who had not been doing the proper stint of work and in the settlement must be taken back were lame ducks and not able to do their proper stint of work. The employer in this case does not take them as he finds them, but has them thrust down his throat. It is not rarely my experience to have a man under my care or sent to me for an opinion of his condition, the result of an alleged accident, when I had treated the man for the same symptoms months or years before the alleged accident. I have also had men refuse to be sent to me who later have admitted to me when the case was settled or when they were forced to come to me that they expected I would

give some information regarding their previous condition. Sometimes the necessity is great; sometimes the love of a much-needed rest is greater, and once in a while the recognized necessity for slowing up is greatest. That money should be taken from him who hath and given to him who hath not, is hardly a valid argument excepting in idealistic Christianity; in the Soviet land; or in thieves' quarters: yet, a somewhat parallel idea is not rare among real and practical people regarding the money of other folk. It is suggested that the origin of many of these ills of previous conditions arises in the course of a man's employment; that the employe has been worn out in industry—if not in the last few months, then in the last few years; that the essential factor in the increasing disability primarily results from his labor, and, therefore, there should be a tax upon industry for the support and protection of one broken by industry, and time as a factor should not be of the essence of this understanding or argument. I believe this argument and this idea to be true, and labor along these lines has a just grievance. I recognize and assert that laws must and will be made in the nearby days to cover and remedy this present failure. Such conditions arising should be a tax upon industry and such pathology arising out of the character of employment, even going back ten, fifteen, or twenty years maybe, should be paid for, in my opinion, by industry. This is right, square, and equitable, and such an arrangement in the end must and will prevail: yet, this has nothing at all to do, as I see it, with the present status. There is at present no way to levy such a tax covering various industries (perhaps long extinct) of the past twenty-five years, more or less. As a matter of fact, we cannot make a law so retroactive. You can hardly levy on me to compensate one for something that my grandfather should have attended to, although at that time no such idea had arisen, and certainly cannot ask me to pay for what my grandfather's dearest enemy had either accidentally, thoughtlessly, or even wilfully neglected. There should and will be found some method to take care of such persons in the future, and there is no better time than the present to begin. Certainly, this will be seen more and more clearly in the future, and great business will neither expect, hope, nor be permitted to prosper by using up or breaking up humanity as has too often been the case in the past. Two cases confront me now along this line: A plasterer, a very expert man, for many years has worked chiefly at overhead ornamental work and has become very skillful thereat, thereby earning extra money above his craft. He has developed, most probably as a result of the necessary continued vertebral hyperextension, a potential and probable steadily increasing spondylolisthesis. In this condition and position, about a year ago a twist gave him a sacroiliac strain for which he claimed and received compensation. He recovered from the strain, but the tendency towards spondylolisthesis steadily increasing with his years and weight, he finds that he can no longer, with any degree of security and comfort, do the special work which calls for vertebral hyperextension. This, however, is what he does best, what he feels he is best fitted for, and what pays him the most money. This potential spondylolisthesis, however, in my opinion, is a pathological condition engendered chiefly by his occupation and dependent upon the industry he has been engaged in. The issue is plain and simple to me and I am keen to know how the commission is going to decide, for they have no easy job in this and in similar cases. They are making precedent and history in their work of today, and what they are now deciding shall rise to comfort or plague them hereafter. Here is another case along these lines in which the scales of justice will be hard to balance, and it will take a Solomon to give an unquestioned judgment.

An honorable man well advanced in life has for a great many years worked at heavy, highly skilled mechanical work. For some time for three reasons—advancing years, a little stiffening, and favor of his employers for an old, steady and efficient worker—he has been given light work. During this work (the man himself feeling vigorous, perhaps not appreciating his gradually lessening capacity) he received two slight accidents (several weeks apart) to his elbow. After the second accident he finds, apparently to his surprise, that he can no longer wield the tools of his trade. Several weeks elapsing without recovery, he seeks other medical advice, and it is found that his elbow has less than half normal motion. Loose pieces of bone and irregular masses of bone are found by the finger and in radiograms in and around the elbow. The man has had an osteochondritis, endochondritis dessicans if you prefer, over many years, and the slight accidents, while probably producing the suddenly noticed symptoms, are merely an incident in the history of the lamed joint. The accident, in my opinion, should not be held even as a major cause. The occupation, on the other hand, was the major factor. What is the answer? How and who shall compensate? Another man, a structural worker, was under my care years ago with a fracture in the upper third of the left femur. The fracture at that time was readily reduced and held with a metallic suture, which, by-the-by, is still in situ. He recovered with normal function and has been working as usual up to the last accident. At the time we first examined him, we noticed an old overlapping fracture of the left clavicle and a suspicion of a fracture of the right clavicle. Some three months ago he fell and shattered the right humerus in the surgical neck; fractured the left tibia at the internal margin into the knee; and also the left fibula into the left ankle. He is again making a good recovery and apparently will soon be again about his work. However, he has had five important fractures of long bones, to my knowledge, and each one lessens his normal a little bit. He is getting by well, however, and probably does and will consider himself normal. However, looking into the future—suppose he has a few more fractures during the next ten years, each one taking a little from him. He will then be over the active period of life, but perhaps will still have the will to do, or more likely be forced to do, and perhaps now gets a comparatively mild injury to his hip, knee, ankle, or shoulder. He may have disability out of all proportion and possibly out of all relation to his accident, and comes before the commission for justice. How are they going to apportion it? Still, his dis-

ability is directly traceable to his work and in my opinion, of right, should be a tax upon industry; but to what accident should it be apportioned? And what insurance carrier should justly pay the tax under our present law? A tax upon industry, we say; but upon what industry, and where? Here is another one: A Russian, 48 years of age, who had lived in Russia up to the last two years, going through the war with all its hardships and vicissitudes. Since he has been here, he has been a laborer and within a few months gets a slight fall, injuring his back. After a few days he resumes his work, but says his back troubled him. The discomfort or distress or pain gets worse and worse and he lays off from work. Radiograms taken at this time, not by me, show a very extensive osteoarthritis of the spine with spurring, bridging, and mushrooming. This condition, we know, must have existed, gradually increasing for many years. He has a progressive disease, hastened probably by the slight fall, but destined to develop, regardless of any fall, and be eventually disabling, especially if, as in this case, the man believes he has a "meal ticket for life." In this case the back was not normal, he suffered some from it, and very possibly, even probably, the slight injury had exaggerated the symptoms; in fact, may have called the stiffening to his attention. The man was not entirely disabled—on the contrary, was able to do a reasonable amount of work for years if he had the will and desire to do so. He needed some help and as time goes on will need greater help, and naturally will have greater and greater disability as time advances. He had a wife and children and appeared honestly to believe he was entitled to full compensation. He came to me outside of the insurance company for an opinion towards getting greater compensation. The injury, however, in my opinion, was perhaps responsible for 10 per cent or at the most 20 per cent of his disability; perhaps not responsible for any of it. Who should pay the compensation his family needed, and which he strongly felt and was advised he was entitled to—the employer for whom he worked a few days? the Russian Government for whom he struggled and slaved for twice as many years? Whose industry should be taxed—American or Russian? Civil or military? It may be that all men are brothers under the skin, but why flay John Jones because the hide of Ivan Ivancovich was tanned? Many such cases have presented themselves: Mexicans, Slavs, Cubans, and Europeans, in whom it was evident that their structural condition was such before they entered this country that a simple examination could have determined that their disability was imminent and when occurring would probably be severe and lasting. Previous pathology modifies results perhaps more after injuries to backs than after injuries to any other structure. As a fact, previously existing pathology in backs is probably responsible for most of the economic waste occurring to the insurance carriers under the compensation law. They not alone take much more compensation than they are equitably entitled to, but to a very great extent increase the medical expense of the insurance carriers. Most of this excess is due to previously existing pathological changes, osteitis and periostitis chiefly. To a lesser degree perhaps it is augmented by a desire on the part of a man who is advancing in years to escape the daily, strenuous treadmill of modern industrial life, and not a little perhaps, to the doctors under whose care they come, and to the ofttimes multiplicity of doctors whose advice has been sought by the patient and the insurance carrier—by the former to get symptoms relieved if possible (and they often doubt this will be done), but if not, to at least have their symptoms discussed, accepted, explained, and put over to the commission—by the insurance carrier to get rid of apparently never ending worry and expense, and to secure explanations and opinions which will enable them to get what appears to them to be a reasonable rating. It has more than once been my duty to examine a man for disability resulting from an alleged injury to his back or to his sacro-iliac area after I had had the privilege of treating him for similar symptoms years before, resulting from a similar accident, and had issued the warning then that a recurrence would probably occur under such and such circumstances. I have suspected, even known at times, that the relapse or recurrence was deliberately provoked because the man was tired of not being able to do a heavy day's work against his partner, and knew he was getting older all the time and soon might not be able to hold down any job. I have been cognizant of this in several cases, and have suspected it (or rather known it as well as a man knows anything that he has not himself observed) in several scores of cases.

It is not wise, speaking solely from the standpoint of the patient, in a case of injury to a back, complicating a vertebral osteoarthritis to be examined by too many doctors. In a multiplicity of counsel there is not necessarily wisdom—much more often the reverse of wisdom. Just as often as "too many cooks spoil the broth" do too many doctors hinder the recovery of such patients, and this for two reasons: First, it gives the patient's conditions and symptoms an undue prominence and emphasizes the readily acquired idea that the condition does not permit of recovery; and second, no two doctors express themselves in similar language even when agreeing upon the condition, and this difference in expression ofttimes impresses the patients as difference in opinion. (It must have occurred to you, as to me, when the patient was told that he had a fracture to have his reply: "Dr. Blank told me I only had a break"; and on such a statement (that is difference in words used) the patient bases the idea that the doctors did not agree about the case.) Harm comes to the patient and expense to the insurer by way of the doctor in another way: a multiplicity of opinions mixes things up and generally favors a compromise treatment. With no one satisfied and no single plan properly carried out, wisdom is not found, and a definite plan of treatment is not carried to success along such lines. Many a promising case is ruined, treatment greatly prolonged, expense vastly increased, and worse than all, the patient demoralized and dropped below the level by too many opinions. Better a mediocre plan carried out in detail than a compromise of many better plans, no one of which gets a complete trial. I think it is in this way that insurance carriers may get an advantage from a staff

of their own, probably of second-rate men, for although the particular plan of treatment may not be so good, it is taken care of in detail.

Speaking of pathological conditions, results, treatment, and multiplicity of opinions, I would like to put myself on record as saying that, in my opinion, too much stress is laid by the doctor upon the history and statement of the patient in structural damages rather than upon conditions found. In my opinion, the examining surgeon should examine a patient as an engineer a bridge, and make a report of what conditions are found, paying only secondary attention to the statements of the parties in question, not because necessarily there is intent to mislead, but rather because the injured man does not know, and mixes imagination, memory, and reasoning in his tale. It would be cheaper, and so far as I am concerned, often of just as much avail to both parties if the history were taken by the stenographer in the insurance office. After all, one is dealing with a structural condition which may be determinable, and not with theories, stories, or opinions. I have digressed somewhat, and ask your pardon for the digression, because it appears to me that "plenty talk" on the part of the doctor or doctors is responsible for delay and the gradual infiltration of the patient with the feeling that he has suffered much, and much is coming to him. In this frame of mind he is not likely to admit previous disability—in fact, the recollection of the past is overborne by the pain of the present and the question of the future. I well remember a horseshoer who was sent to me with recent infected fractures of the lower leg. Noticing a kyphoscoliosis of the third degree with a marked psoas contracture, and appreciating the possibility later of the back conditions being blamed upon the infected areas, I had him well radiographed and a careful detail of the hip and back contractures and positions made. A good recovery was secured from the fractures, and the man was probably afterwards in practically as good condition as before his accident, yet he claimed disability from shortening of his leg and inability to straighten his hip-joint (due to the previously existent psoas contracture secondary to the deformed back). By telling his story well himself, apparently believing most of it, and getting some members of our profession honestly to support him, he gets a rating of 32 per cent. Really the man was disabled, perhaps 32 per cent or more, although I doubt it, but approximately nine-tenths of this disability existed prior to the accident and was, as I see it, not up to the insurance carrier. The man is now a great friend of mine, although I stood against him at the settlement, and again is engaged in mechanical work (not horse-shoeing) and making more money than he was before. Surely, the gods favored him in slipping him such a fortunate accident at a time when his months were numbered as a horseshoer. The employer took him as he found him, and found "some lemon." This is a type of man, and not the very worst, that has come under my observation, and I am using it (of course, because it is a well-marked case)—if not to point a moral to at least adorn my tale. Take the picture of his back and hips as they appeared at the time of the injury, not after the infection had spent. Many of you have seen similar cases spurred, and bridged, and even fused with periosteal outgrowths which extended away from the vertebrae more than a centimeter, locking and interlocking, this condition showing within a few hours of the accident, mind you, so that one could approximately measure the previously existing and gradually growing pain, stiffness, and disability, in spite of all statements and evidence which might be and was offered by the applicant. Many years, you will appreciate, it must have taken to develop such extreme changes, the causes being drink, exposure, hard work, and last but not least, repeated gonorrheas. There is an old adage, perhaps once true, that "Those who dance must pay the piper," and again from the sacred writings—"What ye sow that shall ye also reap"; but in this case the sowing of the whirlwind brings to him, through the beneficence of the law, balmy ease and comfort as he approaches the autumn of life. I tell you he appreciates that accident, and because of his friendship to me I rejoice in his good fortune, reached, as stated in the biography of Mr. Raycroft, "through no work nor virtue of my own." The arguments usually offered and ofttimes worthy of all credence that "he worked before at the same place for ten years without a lay-off by reason of sickness, previous to his accident" means no more than the statement of the hotel-keeper in the backwoods who, when a guest sought a clean roller-towel, exclaimed: "Well, dang it, sixty-five men used that roller this morning and you are the first one who complained." Going on the ferry a few months ago, my attention was called to the piles at the dock. A great many were eaten away, coming to points like sharpened pencil-ends meeting. A few even were parted; yet, the dock stood. The boats went in and went out, bumping on the sides day after day, the piles withstanding the blows, and one stood and wondered. A short time later I saw in the paper that this ferry was out of commission because a boat had hit the dock a glancing blow and it had caved in. It is possible that the last blow was not nearly so hard as the dock had had previously; and daily and hourly resisted, yet the argument that, because of the earlier daily known work, it must have been all right previous to this last blow, is not valid to the engineer who sees the extensive pathology and knows the teredo has been doing his work for years before—in short, the wonder was not that it fell with this particular blow, but that it had withstood the blows over the days and weeks and months before.

In conclusion, it is my desire to emphasize the following: That previous conditions, arising out of earlier injuries or already existing diseases, may and often do materially modify results obtained after industrial injuries; that outside of osteo-arthritis and probably the major fraction of even this, the most important cause for previously existent structural pathology of the working man, lies in the long continued exposure to the elements, the faulty, ofttimes necessary, positions, the frequently repeated minor injuries occurring perhaps over a great many years. The last accident is ofttimes not the one important factor in the disability. Of right, the gradual using up and wearing out of a man in industry should be just as compensable as his breaking up. Laws must

be made in which the time factor is not of the essence of the understanding—that a date is not important in the using up of a man's structural capacity. A new deal and a new understanding is at hand.

It is true that a little real malingering is being put over, but very little. It is true, however, that a good deal of exaggeration is being put over. Probably the chief cause for this is the feeling that telling the truth about the pre-existent and growing disability mitigates against compensation. If previous conditions ofttimes were accepted as evidence of a using up in industry and were made compensable, the great incentive for exaggeration would pass and a better era between the laborer and the employer would be inaugurated. The time has arrived. Broader vision is necessary for the future. Other laws, wider outlooks, are imperative.

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DISCUSSION

J. Rollin French, M. D. (417 Towne Avenue, Los Angeles)—I have read Doctor Hunkin's paper with much pleasure and interest. The doctor ably deals with some of the most serious problems of industrial medicine. I have examined and directed treatment in many hundreds of cases, such as the variety the doctor describes, and well appreciate the perplexities.

From my experience, I have formulated a definite procedure as to diagnosis and management. I am convinced that it is just as important to make a psycho-analysis of the mental aberrations of the patient as it is to diagnose the osteo-arthritis of the vertebra. I most heartily concur in the statement that "It is not wise to have the patient examined by too many doctors." It is surprising how soon some of the seemingly ignorant patients pick up medical phraseology and subjective symptoms therefrom. Perhaps, I can better express myself by defining the varieties of malingering. First, let us divide them into true and false malingerers. A true malingerer is one who, with malice aforethought, feigns for gain. This type, as a rule, are not difficult problems. The false malingerers are those who misinterpret existing symptoms and feel they will do themselves bodily harm if they attempt to work, when, as a matter of fact, they are doing themselves bodily harm by not working. The skilled diagnostician well realizes that work, in many instances, is the best treatment, but he overlooks the importance of psycho-analysis and hence is unable to sell the patient the idea. We sometimes condemn the patient for not understanding and going to work, when, as a matter of fact, the physician should condemn himself for not having the ability to successfully teach or sell the idea, which would result in co-operation.

I do not always blame the ignorant mind for thinking that perhaps eczema is the result of an injury. The patient does not know the etiology of eczema (?). With a few exceptions, I have found that a simple explanation frequently transfers cases of this nature from the compensable class. I believe we should give some consideration to the fact that the average layman knows but little relative to the subject of pathological etiology; therefore, we should have more patience in explaining same. To reverse the situation, I will relate a conversation between a doctor and the manager of an automobile agency. The doctor had but little knowledge of mechanics. He was having difficulty in keeping his automobile running smoothly, and, after repeated visits to the adjusting department, he called upon the manager and condemned the car as not being satisfactory, and intimated that he had been sold a lemon. The manager, instead of completing the sale by educating the doctor in the successful operation of the car, lost his head and told the doctor "he was selling automobiles and not brains." It is needless to say that that automobile concern lost a customer. Successful men in any profession are those who can sell ideas successfully.

Nature is most accommodating, and if we sell the idea of co-operation to our patients, nature will compensate, in many instances, the deformities or pathology by rerouting function.

I believe "Take the employe as he finds him" is worthy of greater discussion than space here permits, and there are many good points for and against.

With reference to the cases of spur of the os calcis, no doubt the psychic damage causing prolonged compensable disability was caused by the doctor who preceded Hunkin. Had the first doctor definitely and positively diagnosed the cause of disability and so explained and sold the idea to the patient, compensation would have suffered but little beyond the expense of the original examination. The patient, perhaps, was in good faith when he thought the slight accident caused the disability, but negligence on the part of the attending physician to explain the true cause of disability further prompted the patient to accept the slight injury as the cause of disability. Self-preservation is the first law of nature. I have even heard physicians exaggerating circumstances when applying for replacement of an automobile tire or surgical equipment. Perhaps, the physician was in good faith, but for lack of knowledge upon the subject was apparently claiming something to which he was not entitled. These circumstances parallel injured employes attempting to obtain compensation payment. I believe it is the physician's duty to exercise every reasonable effort to educate the patient when he, the patient, applies wrongfully for compensation benefits. If after exhausting his resources in his effort to convince the patient of the true etiology of disability and that his disability is not compensable, the physician finds he is not successful, then, in my opinion, it is his duty to collect all possible evidence in tangible form to prove same before the Industrial Accident Commission. Physicians at times are so endowed with the idea that their diagnosis is correct and they frequently lack the legal training of preparing evidence for a decision by another.

In conclusion, I wish to state that I believe Dr. Hunkin's paper has ably and forcibly brought out the urgent necessity of several points in the management of patients with previous disease due to industrial injuries:

The importance of an early and positive diagnosis as to the true cause of disability.

To more carefully weigh subjective symptoms.

The necessity of better and more positive salesmanship on the part of the physician after making a differential diagnosis.

The necessity of greater knowledge of law and contract by the physician.

The importance of psycho-analysis in differentiating between true and false malingerers. The value of accurate evidence in which to supply a judiciary when it becomes necessary to settle differences of opinion.

J. L. Pritchard, M. D. (Twohy Building, San Jose, Calif.)—Doctor Hunkin has definitely pointed out some salient features of a situation which many times is embarrassing and often humiliating for the physician. Are doctors to blame for many unseemly occurrences in cases before the courts and industrial accident commissions? It is not unusual to hear a layman say that one may get a doctor to testify to anything, and everything. If that is a correct statement of prevailing conditions, then it is no wonder that the injured malinger. If they do not do it of their own free will, they often have it thrust upon them.

In most features the industrial situation is very similar to that of the disabled soldier. If a man was accepted as sound at the time of enlistment, any disability arising would be considered as "due to service," although it might be osteo-arthritis, sacro-iliac strain, or what not. Many industrial organizations insist on their employes passing an entrance physical examination, and more than that—a check-up yearly or semi-yearly.

Frank M. Mikels, M. D. (Long Beach, Calif.)—After reading Doctor Hunkin's paper, I am very much impressed with the salient and important facts which he has presented relative to pathological conditions existing previous to industrial injuries and subsequent psycho-neurosis following physical traumata.

The attending physician is under a moral obligation to

render to patients that order of therapeutic procedure which will restore them to as near normal condition as possible with the highest degree of function. He must use extraordinary tact in his discussion of existing pathological conditions, when satisfying the curiosity and demands for information, not only from the patient himself, but also the members of his family. The implantation of morbid ideas through suggestions into the psyche or consciousness of a severely injured patient may often lead to fixed mental morbidities which may play a great part in impairing the normal function of his injured limbs or other parts of the body. Functional psycho-neuroses following severe joint, tendon, and nerve injuries, are often responsible for a great degree of the disability resulting from such injuries, and sometimes from very slight trauma.

It is very difficult to fix the degree of relative causation when neuropathic conditions develop subsequent to a series of industrial injuries extending over a period of several months or years. The object of paramount importance is to get away from the dogmatic discussions and the diagnostic hypotheses and settle down to the practical application of more recent methods of physiotherapy, such as deep therapy, diathermy, galvanism, faradism, mechanotherapy, massage, and the other kind of physical or mechanical readjustment that will clear up the complications subsequent to various injuries.

The time has come when the industrial surgeon and physician must recognize the true value of these recent therapeutic agencies and apply them properly in degree and modality, as indicated in each individual complication or pathological condition.

The psycho-neurotic personality may maintain a normal degree of occupational efficiency until he meets with a physical injury attended by psychic trauma. Following in the wake of the psychic trauma may come metabolic disturbances, manifested by recurrences of asthma and eczematous manifestations. Paralysis may develop which has only a psychic basis. A latent thyro-toxic condition may be aggravated and accentuated as a result of the emotional shock attending physical injury. It is not unusual for a cardiac myasthenia of the neuropathic type to manifest itself and thereby incapacitate the injured employe for a long period of time.

The state compensation law contemplates protecting the employe against disabilities arising from existing pathological conditions which may be aggravated by an industrial injury. Having this premises as a basis of medico-legal relationship with the patient who has met with an industrial injury, the physician in charge finds himself in a very delicate position, requiring extraordinary judiciary consideration as well as medical and surgical acumen.

And Still Some Who Promote Charity as a Business, Accuse Them—The doctor is one of the few professional men who gives his service free to the public. The doctors of the United States give away about $1,000,000 worth of service every day in the year to the indigent and to those who do not pay bills.—Chicago's Health, February, 1925, "The Physician."

"The Physician as a Sanitarian"—Every physician is a guardian of the public health, and the community expects him to be interested in medical matters of a public nature, just as they expect the lawyer to take part in the legal aspects of public affairs, or any other citizen to contribute his best thought upon public questions. The opportunities and influence of the physician as an educator are greater than those of almost any other group. Many have implicit confidence in the word of some physician, and the attitude of the public toward public health matters is to some extent a composite of the attitude of the physicians of the community.—Chicago's Health Bulletin.

MALIGNANT TUMORS OF THE KIDNEY

WITH SPECIAL REFERENCE TO DIAGNOSIS

By Frank Hinman, M. D., and Adolph A. Kutzmann, M. D.

(From the Department of Urology, University of California Medical School, San Francisco)

The incidence of malignant tumors of the kidney are to the extent of 0.25 to 1 per cent in adults; 0.06 to 0.1 per cent in children. Of tumors in general, they constitute from 0.5 to 2 per cent in adults and about 20 per cent in children.

The pathogenesis of kidney tumors is still in the hypothetical stage. The types most commonly found are the hypernephroma, occurring chiefly in late adult life and "embryonic mixed tumors" found during early childhood.

Clinically, all renal tumors should be considered malignant because of the great rarity of the benign types.

The classical signs of kidney tumor are hematuria, pain and tumor. Hematuria is the most frequent initial symptom in adults, while tumor is in children.

The importance of each symptom should be considered initially as it appears and the diagnosis not allowed to wait until the clinical picture is complete.

Only by thorough early investigation can we hope to influence the present appalling morbidity of 90 per cent.

The urological examination should always be complete and include a differential examination of the urine, functional studies, and ureteropyelography.

The correlation of the clinical findings and urological findings should be carefully entered into so that a diagnosis may be arrived at in the doubtful cases.

Discussion *by George F. Schenck, Los Angeles; Nathan G. Hale, Sacramento; Paul A. Ferrier, Pasadena.*

THE surgical problem of care of malignancy any place in the human body has two very important and fundamental points: (1) An accurate diagnosis made early enough, (2) to make possible a complete and permanent removal of the tumor. Application of these principles in treating malignancy in some parts of the body has most markedly lowered the mortality. The breast, uterus, and mouth are notable examples, and the fact that metastases in these conditions occur primarily along the draining lymphatics which are surgically removable, still makes possible a small percentage of cures even in those who seek aid in the later stages of the disease. Thus Bloodgood has found, in thirty years' experience, that cancer of the tongue when gotten in the early stages yields a cure in 62 per cent of cases, while only 12 per cent are relieved in the later stages; in breast cancer, 70 per cent may be cured if treatment is sought as soon as the lump is felt, 25 per cent if the lower axillary glands have become involved, and only 10 per cent with the involvement of the higher axillary glands.

In malignancy of the kidney the problem is similar but more difficult, particularly respecting early diagnosis, and more radical surgery than nephrectomy has never been successfully advocated. There are really no pre-cancerous or early symptoms in kidney tumor. A. O. J. Kelley, in 1895, showed that 72 per cent of cases came to autopsy undiagnosed, in spite of advanced liver and lung metastases in many. Kronlein, in 1905, also encountered this problem and was unable to make an early diagnosis in twenty cases.

The ultimate mortality today is still an appalling one, being placed as high as 90 per cent by some

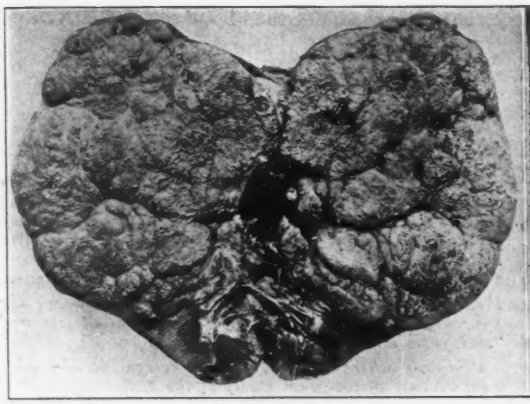


Figure 1.—Photograph showing a large hypernephroma involving almost the entire kidney except for the lower pole. Note the solidity of the tumor. This type is the common kidney tumor of adults.

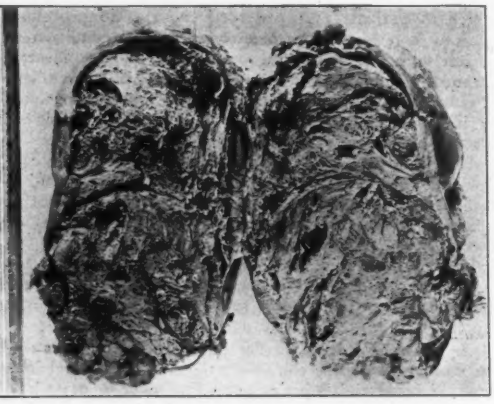


Figure 2.—Photograph of a large "embryonic mixed tumor" of the kidney, weighing 9.9 pounds. Note the varied picture due to multiple areas of hemorrhagic extravasation, degeneration and necrosis with multiple cyst formations. The tissue is friable and lacks supporting stroma. This is the common kidney tumor of children.

observers (Braasch). The onset is very insidious. By the time hematuria, pain or tumor appear, the case may be in an advanced stage. Gregroire attempted to apply surgical principles to renal tumor by a radical resection of the primary renal lymph zone at the time of nephrectomy, but, aside from technical difficulties, metastases occur chiefly by way of the blood stream to remote parts of the body, as a glance at the following tables shows quite forcibly.

Distribution of metastases in 176 cases of hypernephroma (Watson and Cunningham):

Hematogenous	Cases
Lungs	26
Bones	35
Internal organs	29
Liver	8
Brain	4
	102

Lymphogenous	Cases
Regional lymph glands	11
Scar	9
Adrenal	2
	22

	Cases
Lower G. U. tract	4
General metastases	6
Miscellaneous	7

Distribution of metastases in 307 cases of "embryonic mixed tumors" in children (Walker, Watson and Cunningham):

Hematogenous	Cases
Liver and lungs	34
Internal organs	16
Opposite kidney	11
Nervous system	1
	62

Lymphogenous	Cases
Retroperitoneal glands	12
Mesenteric glands	6
	18

	Cases
Miscellaneous	7

Metastases to a distant part of the body may lie dormant for a number of years. It has been found that cases have died six years after operation, and Kronlein cites a case which succumbed twelve years later.

The outlook is discouraging. So long as surgery remains the only hope in the face of this appalling mortality, the surgeon must make earlier diagnoses, inasmuch as more radical surgery is useless. The public, as well as physicians, should be thoroughly familiar with these facts, and the urologist should realize his personal responsibility by studying and improving methods of investigation. The urologic study of suspicious cases must be complete, thorough, and prompt in order to increase the percentage of early diagnoses. The findings of ureteral catheterization, pyelography and renal functional studies are not infallible. Even the urologist cannot make an accurate diagnosis in the majority of early cases.

HISTORICAL NOTE

Early descriptions of epithelial tumors of the kidney appear in the writings of König, Rayer, Parker, Shepherd, etc. Robin, in 1855, put forth the first definite description, showing them as being derived from the tubular epithelium. This was accepted by Waldeyer, Klebs, Recklinghausen, etc., who classified kidney tumors as benign adenomas and infiltrating carcinomas. In 1870, Catanni was apparently the first to recognize the occurrence of the sarcomatous elements. The first epochal article to appear was that of Grawitz, in 1883, wherein he recognized the yellowish cortical tumors to whom Birch-Hirschfeld, in 1892, applied the term "hypernephroma." They were regarded as springing from adrenal rests in the kidney. In 1894, the second great group of kidney tumors were described by Birch-Hirschfeld. From their structure, he suggested that they arose from Wolffian body rests and were mixed as to constituent tissues. He named them "embryonic adenosarcomata." In a very able discussion appearing in 1899, Wilms furthered the embryonic theory and called them "mischgeschwulste" or mixed tumors.

Since then there have appeared from time to time excellent discussions, but fundamentally very little has been added to the work of original investigators (Beneke, Muus, Sudeck, Klose, Garceau, Busse, Ribbert, Wilson, etc.)

Pathogenesis—The histogenic origin of the large groups of kidney tumors is still in doubt. Grawitz originally, and later Birch-Hirschfeld, showed that the hypernephroma came from adrenal rests in the kidney. This was later contested by Stoerck, who is of the opinion that their origin is renal. Wilson derives them from the nephrogenic blastema, and has applied to them the term "mesothelioma."

The views regarding the pathogenesis of the "mixed tumors" can be summarized as follows:

(a) That their origin is due to inclusions of Wolffian body tissue (Birch-Hirschfeld).

(b) That aberrant cells of the myotome and sclerotome are responsible for the tumor growth, and that the apparent mixed character is to be explained by the varying constituents which enter into the ultimate formation (Wilms).

(c) That these tumors are derived from the embryonic tissue of the true kidney, which persists and becomes metamorphosed (Busse, Muus, Ewing).

Due to this uncertain knowledge of origin, many classifications have been brought forward. For clinical purposes, the following from Eisendrath is probably the best:

1. Primary Neoplasms of the Parenchyma:
   - Epithelial Type:
     - (a) Adenoma.
     - (b) Carcinoma.
   - Connective Tissue Type:
     - (a) Benign — fibroma, myxoma, chondroma, leio and rhabdomyoma, angioma.
     - (b) Malignant—sarcoma.
     - (c) Embryonal adenomyosarcoma — also called teratomata or mixed-cell tumors.
   - Neoplasms Due to Misplaced Adrenal Rests—Hypernephroma.
2. Primary Neoplasms of the Renal Pelvis:
   - Epithelial Type:
     - (a) Papilloma (benign).
     - (b) Papillary carcinoma.
     - (c) Epithelioma (squamous-celled).

CLINICAL

Incidence—Renal tumor is not a very common occurrence. Collected statistics show that in general they occur in adults from 0.06 to 0.1 per cent.* In the University of California Hospital, from 1906 to 1923, inclusive, there have been twenty-nine cases among 46,800 admissions—0.06 per cent. In adults their relative occurrence among tumors in general is from 0.5 to 2 per cent; in children, they constitute about one-fifth (20.4 per cent).*

From the confusion as to pathogenesis and types, the hypernephromata and embryonic mixed tumors are the two most frequently found. The former occurs most frequently during late adult life, and the latter during early childhood. Next in frequency are the carcinomata of the parenchyma, papillary carcinomata of the renal pelvis and squamous-celled carcinomata of the renal pelvis.

* Hinman & Kutzmann: Malignant Tumors of the Kidney in Children. Ann. Surg., 1924, lxxx, 569.

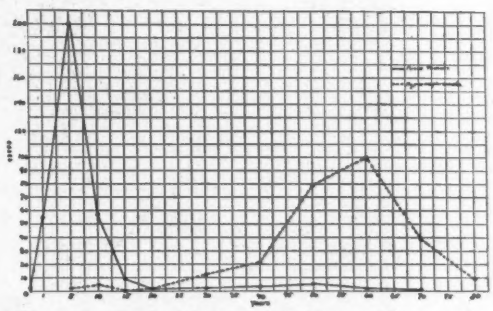


Figure 3.—Chart showing age incidence of hypernephromata and "embryonic mixed tumors." Note that the hypernephromata occur chiefly in old age, and "mixed tumors" in childhood. Based on 267 hypernephromata and 341 "mixed tumors."

Diagnosis—The signs and symptoms are an important factor in diagnosis, and yet they may not be pathognomonic. We are often confronted with a paradox; we must try to cure tumors which run a rapid and fatal course unless an early diagnosis can be made, and yet their onset usually is insidious; and when they present themselves with the usual diagnostic group of symptoms, the case may be beyond help, in spite of the fact that no metastases are clinically demonstrable. There present themselves a group of symptoms which have been found to be more or less constant, namely, the "cardinal trio"—hematuria, pain, and tumor. It has been our experience that when a case presents these symptoms, the diagnosis is not an early one and the case usually terminates fatally, in spite of surgical aid, and yet over one-third of cases coming to operation present these symptoms. To add to the difficulty it has been found that the pre-operative duration may be no index of the prognosis. Cases may even terminate fatally and never at any time show any sign or symptom. The lesson to be learned is that the appearance of any single symptom should at once lead to a thorough investigation.

The following table, prepared from various sources (Willan, Barney, Israel, Squier, Albrecht) presents at a glance the prevalence of the signs and symptoms in adults:

SIGNS AND SYMPTOMS OF MALIGNANT TUMOR OF THE KIDNEY IN ADULTS

	Initial Per cent	Associated Per cent
Hematuria	21.4-70 Av. 42	80
Pain	30-40 Av. 35	58
Tumor	18-20 Av. 19	85
Weakness and loss of weight (cachexia)	9-20 Av. 13.5	75
Varicocele (left)	.....	15
Fever	.....	8
Anorexia, vomiting, edema of legs, metastases	Rare	....

In children, the problem is even more difficult. Added to the insidiousness of onset, tumor is usually

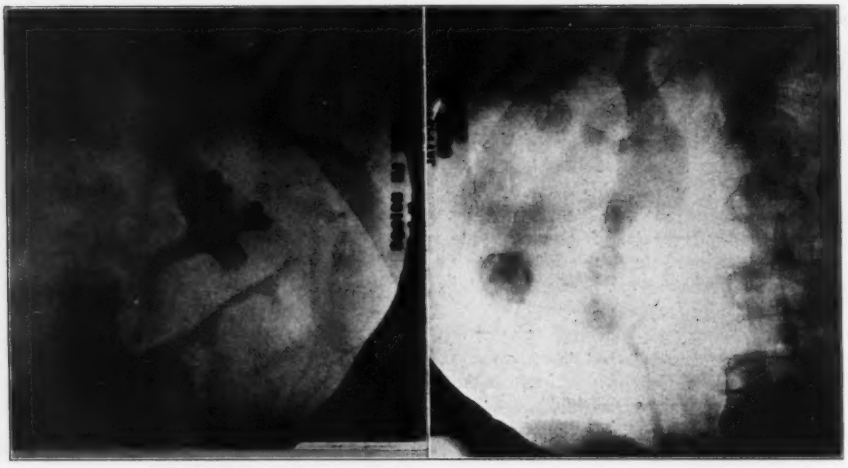


Figure 4.—Typical pyelogram of a malignant tumor of the kidney (hypernephroma) showing the "spider leg" deformity.

Figure 6.—Photograph of pyelogram of a polycystic kidney. The filling defects in these cases often simulate a malignant tumor and must be carefully differentiated.

the initial symptom; also, the protuberant abdomen of young children tend to mask this sign. Such tumors usually are not found until they have attained a large size, by accidental palpation or after cachexia and weakness have set in. The following table shows the prevalence of the signs and symptoms in children:

SIGNS AND SYMPTOMS OF MALIGNANT TUMOR OF THE KIDNEY IN CHILDREN

	Initial Per cent	Associated Per cent
Tumor	42-71 Av. 57	90
Pain	7-20 Av. 14	20
General weakness	11	
Vomiting	8.8	
Icterus	2.2	
Diarrhea, constipation, ascites	1 ea.	
Hematuria	Rare	5-35 Av. 14

That we have failed to make but little impression on the prognosis, is shown by the fact that the morbidity still ranges about the appalling figure of 90 per cent. We must be open-minded in facing this tremendous problem. Such a high figure in the ultimate mortality shows that diagnosis is too long delayed, either because the urologist is not seeing hematuria cases early enough, or because his methods are yet inadequate to make an early diagnosis. The important significance of blood in the urine must be taught, even though it be the only symptom and transient. Fraser reports a case of renal tumor in a child where there was a transient hematuria one year before operation, and yet the case was not seen by the surgeon until the tumor had reached a large size. Obviously, the urologic surgeon cannot be asked to cure malignant tumor if the case has gone until metastases have probably taken place.

Our experience with malignant tumors of the kidney is far from cheerful, yet it is probably no different from that of many others. In the last eighteen years, twenty-nine cases have presented themselves for treatment. Of these, twenty-three cases were definitely proven, while the remaining six have insufficient data. Seventeen cases occurred in adults, and six in children. Of these, eleven were operated upon; ten either refused operation or were deemed inoperable; two were completely missed during life and found at autopsy. But two cases are alive of the surgical cases and of these, one was lost sight of two months post-operative; the remaining case is still living and well seven months post-operative, so that we have no cases coming within the period of cure. The remaining surgical cases succumbed in from several days to two years. We can, therefore, expect practically a 100 per cent morbidity.

It seems that most of these cases were seen in the late stages of the disease. The following table, briefly shows their occurrence as to initial symptomatology:

Hematuria, Pain, Tumor		8 cases
Hematuria or Pain or Both		6 cases
Tumor	(all children)	5 cases
Cachexia and weakness		1 case
No urologic symptoms		3 cases
Aortic aneurysm	1	
Pulsating tumor of skull	1	
Exophthalmos	1	
		23 cases

Note that eight cases showed all three signs and symptoms, that five cases had large abdominal tumors, and one with cachexia—fourteen cases (60 per cent) in which at once the prognosis was a bad one. Twelve cases showed no clinical metastases,

and of these ten were operated. Eleven cases showed clinical evidence of metastases, and of these one was operated upon. This was a case which entered with a pulsating tumor of the right parietal bone, due to a head injury six weeks previously. The tumor was removed, and upon pathological examination proved to be a hypernephroma metastasis. Careful re-examination of the patient revealed a tumor of the left kidney which had been missed upon the first examination. Urological examination confirmed the diagnosis of left kidney tumor. The patient was again subjected to a most rigid physical examination, but no further evidence of metastases were found. In view of the fact that there are several reports of cases in the literature living and well over six years in whom a solitary metastasis was removed with the primary kidney tumor, a nephrectomy was performed. This patient is living seven months postoperative, without any further signs of metastases and has gained twenty pounds in weight.

Several of the cases have brought forth interesting points and difficulties as to diagnosis. One case entered the hospital with a large pulsating aortic aneurysm. This ruptured and caused death. Autopsy revealed a hypernephroma of the left kidney, yet at no time had there been any signs nor symptoms referable to the urinary tract. A similar case

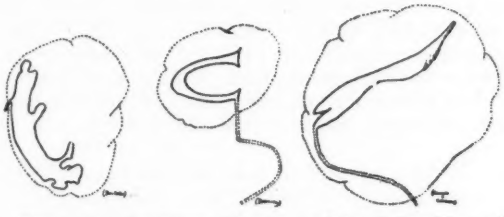


Figure 5. — Drawings showing pelvic deformities of "mixed tumors" of the kidney in children, as demonstrated by pyelography.

entered the hospital with a slight hematuria. Examination revealed a strongly positive Wassermann and widely dilated aortic arch. Urologic examination revealed only a slight deformity of one of the pelves suggesting tumor. In view of the other findings, the kidney condition was considered luetic. The patient died one year later, and autopsy revealed a hypernephroma with metastases to the liver.

A third case entered with a severe hematuria of several days' duration. The history showed that there had been a transient attack of diplopia ten months previously associated with a glycosuria. The glycosuria was still present with the hematuria. The case was considered inoperable, and the opinion was that there might be pancreatic and cerebral metastases.

Two cases in children, one with an exophthalmos and the other with a swelling to the side of one eye, were seen. Post-mortem examination of each revealed a neurocytoma with intracranial metastases. A third case in a child did not present itself for treatment until the tumor had reached huge proportions, weighing ten pounds.

The urologist must be ever on the alert for pitfalls. If any impression is to be made on the prognosis of malignant kidneys, the case must be seen early. Careful attention must be paid to any individual sign or symptoms as they appear. The urologic examination should be complete and thorough, including ureteral catheterization, functional and urinary studies and careful pyelographic studies. Hematuria is the most important leading symptom. Its presence nearly always means an organic lesion in the urinary tract and should never be considered lightly or without significance, even though it be transient. Patients should be encouraged to seek advice from the surgeon as early as possible, for in doing so, not only will the opportunity for cure of renal tumor be enhanced, but also other conditions producing similar signs. Thus, Kretschmer found, in an analysis of 200 cases of hematuria, that 43 per cent were due to new growths in the urinary tract.

SUMMARY

1. The incidence of malignant tumors of the kidney are to the extent of 0.25 to 1 per cent in adults; 0.06 to 0.1 per cent in children. Of tumors in general, they constitute from 0.5 to 2 per cent in adults, and about 20 per cent in children.

2. The pathogenesis of kidney tumors is still in the hypothetical stage. The types most commonly found are the hypernephroma, occurring chiefly in late adult life, and "embryonic mixed tumors" found during early childhood.

3. Clinically, all renal tumors should be considered malignant because of the great rarity of the benign types.

4. The classical signs of kidney tumor are hematuria, pain, and tumor. Hematuria is the most frequent initial symptom in adults, while tumor is in children.

5. The importance of each symptom should be considered initially as it appears, and the diagnosis not allowed to wait until the clinical picture is complete.

6. Only by thorough early investigation can we hope to influence the present appalling morbidity of 90 per cent.

7. The urological examination should always be complete and include a differential examination of the urine, functional studies, and urèteropyelography.

8. The correlation of the clinical findings and urological findings should be carefully entered into so that a diagnosis may be arrived at in the doubtful cases.

380 Post Street.

DISCUSSION

GEORGE F. SCHENCK, M. D. (Westlake Professional Building, Los Angeles) — Drs. Hinman and Kutzmann are to be congratulated on the straightforward and concise presentation of their subject. It is to be noted that they are lamenting over the fact that their cases were not seen early. Hematuria is the outstanding symptom of malignant tumors of the kidney.

Hematuria is a symptom that is perhaps the most constant and significant symptom in genito-urinary diseases. It may occur in nephritis, pyelitis, hydronephrosis, polycystic kidneys; kidney, ureteral, and bladder stones; tumors of the kidney, ureter, bladder, and urethra; ulcers of the bladder; adenoma of the prostate; carcinoma of the prostate; prostatitis, vesiculitis, stricture of the urethra, renal

tuberculosis, malaria, and several drug intoxications. It is a symptom that is due to a definite pathological condition that can be definitely determined in a large majority of the cases.

Unfortunately, the trend of all genito-urinary diseases is progressive. The vast majority of hematuria cases are given some internal medication and told to report in three or four days. Unfortunately, many cases of hematuria will subside spontaneously and not reoccur for months. In the meantime, much valuable time is being sacrificed, and the disease is progressing rapidly. In fact, nothing short of marked and persistent hematuria will get the patient a thorough examination, and if indicated, cystoscopy, kidney study, and pyelo-uretero-grams.

Personally I think if physicians would pay more personal attention to voided specimens of urine and do microscopical examinations of routine urine, they would discover hematuria cases earlier than heretofore.

A word about therapy in the malignant tumors of the kidney: Dr. Keyes makes a wide exposure by extending the usual oblique incision well forward, and, if need be, to divide the anterior sheath of the rectus muscle transversely. Then he does an extra-capsular nephrectomy. His reasons are it may delay metastases, there will be less oozing, less chance for infection, and a better opportunity to heal the incision by primary union.

Dr. Barringer thinks hypernephromas are hopeless for radium packs or deep x-ray therapy.

NATHAN G. HALE, M. D. (Capital National Bank Building, Sacramento) — The urological section is to be congratulated that this subject has been presented to us so clearly by those whose experience well fits them for the task.

Renal tumors are, in most instances, neglected because one of the first symptoms, hematuria, is treated expectantly. There could not be a better warning than blood in the urine, yet it is surprising to note the number of cases where blood in the urine sends the patient to the doctor, and the doctor treats this characteristic symptom lightly.

The urologist's difficulties in diagnosing an early tumor are great. The pyeloureterograms are not characteristic in many of the early cases, and, for that reason, pyeloureterograms, at intervals, should be insisted upon by the urologist when the diagnosis is not conclusive.

In operating, the so-called cardinal principle of removing the perirenal fat in toto with the kidney tumor, on account of possible invasion of this fat by the cancer, is the only procedure in renal surgery for malignant tumors that has been suggested as an improvement in technique for a number of years; and this is of little avail on account of the many cases that metastasize by way of the blood stream.

In conclusion, I hope that the stimulus of this excellent paper will start investigation concerning malignant renal tumors, which will result in an earlier diagnosis and a better surgical attempt at complete removal.

PAUL A. FERRIER, M. D. (Citizens Bank Building, Pasadena, Calif.)—Doctors Hinman and Kutzmann have made the thorough study that we have learned to expect of them. The conclusion cannot be escaped that present surgical methods in malignant tumors of the kidney are wellnigh futile—at best a short reprieve. It is a service to dissuade from unwarranted surgery. The problem awaits solution with that of deep-seated malignancies elsewhere.

DOCTOR HINMAN (closing)—In conclusion, I should like to emphasize the great importance of hematuria as an early symptom of renal tumor, and that this hematuria need not always be macroscopic before recognition. If physicians would acquire the habit of routine examination of urine, by having the patient void in three glasses and examining the second glass for evidence of disturbance in the bladder or above, much more definite findings would be possible. Microscopic study of such urine showing R. B. C. would be evidence of pathology, even though there would not be pronounced bleeding.

The writers appreciate the excellent discussions of their paper that have been given.

DOUBTFUL TUMORS—SHALL WE EXCISE A PIECE FOR DIAGNOSIS?

By A. R. KILGORE, M. D., *San Francisco*

In essence, this paper is a plea, not against diagnostic incision of tumors, but against delay between such incision and complete operation.

IF WE take out an appendix when the real trouble is a kidney stone, we can correct ourselves another day and still cure the patient. But if we leave live cancer cells in a patient and cause, by our interference or permit by our delay, metastasis to take place, we have lost the only chance we had of obtaining a cure. Cancer, of all diseases, must be treated right the first time.

Excision of a piece of tissue for diagnosis offers the most accurate method of diagnosis available, but under varying conditions it may or may not cause metastasis to take place. When it is safe, we ought to be prepared to use this method; when it is unsafe, we ought by all means to avoid it.

Excision of a piece of tissue or of an entire small growth for diagnosis has had ardent support and just as ardent condemnation. When the Harvard Cancer Commission and the New York Board of Health proposed the establishment of free tissue diagnostic services, a storm of criticism was aroused. Dr. Greenough, of the Harvard Cancer Commission, addressed a questionnaire to the members of the American Surgical and American Gynecological Associations to determine prevailing opinion. He found extraordinary disagreement among the men of widest experience in this country, and there is still anything but clear-cut opinion on the part of surgeons generally.

If there are definite facts available from which to draw definite conclusions, those facts ought to be generally recognized and our procedures standardized accordingly.

ANIMAL EXPERIMENTATION

Animal experimentation has not been of great help because the behavior of animal tumors in the matter of metastasis does not parallel that of human tumors closely enough to make it safe to accept experimental evidence in its entirety as applying to human neoplasms. There have been three outstanding communications, however, bearing directly or indirectly on the point in question. F. C. Wood found that aseptic incision of a transplanted sub-cutaneous tumor in rats did not materially increase the number of metastases, as demonstrated at autopsy several weeks later. He was working, however, with an adeno-carcinoma —the so-called Flexner-Jobling tumor—the histology of which is certainly not closely akin to that of human scirrhous or squamous cell cancers.

On the other hand, both Tyzzer and Knox have shown that a very small amount of gentle massage of various animal tumors enormously increases metastasis, and the latter author has shown that the amount of increase in metastasis produced by massage varies directly with the cellular malignancy of the tumor. Neither of these authors experimented with excision of a piece of tumor tissue, but the amount of massage (one to two and a half minutes) described in their experiments is probably not greater than the manipulation necessarily incident to the

operation of excision of a piece of sub-cutaneous tumor.

Incidentally, these papers bring home one very important clinical lesson—the importance of gentleness in the palpation of tumors for diagnosis. If one or two minutes of gentle massage will enormously increase the metastasis of a tumor, what must happen to a breast cancer palpated extensively by several consultants and a group of medical students. One gentle application of the fingers is sufficient to determine the presence of a lump, and if the fingers are trained, the same single palpation is enough to determine size, shape, and consistency of the lump and the presence or absence of fixation to the skin or deep structures. Here, certainly, is one condition in which it is better to sacrifice painstaking and complete description of the characteristics of the lump in the interests of safety to the patient. We cannot help what the patient has already done by feeling or rubbing the lump, but we can avoid the catastrophe of further spreading metastasis by our own diagnostic procedures.

If, then, animal experimental evidence is inconclusive, are there definite facts available upon which to base opinion for human tumors?

It is first absolutely essential to recognize that human tumors behave in widely different ways, varying with the cell type and with the location in the body. The question is not, can we safely excise a piece of a doubtful human tumor, but can we safely excise a piece of a scirrhous breast tumor; can we safely excise a piece or the whole of a squamous cell lip growth, etc. It is the purpose of this paper to discuss individually the commoner tumors for which we should standardize our procedures in the matter of excision for diagnosis.

1. THE BREAST

Very definite facts are available in the case of the breast. Bloodgood has analyzed the end-results in eighty-nine cases of breast cancer so early that the clinical diagnosis was "benign." Twenty of these were approached by excision of the tumor mass. Some days later, after microscopic study, excision of the breast and axillary contents was done. *All of these twenty were dead within five years.* In fifteen, the entire breast was first removed and later, after microscopic study, the axillary dissection was done. Two of these, both having early adeno-carcinomas, remained well after five years—less than 7 per cent cured. Fifty-four cases were approached by exploration, the diagnosis made on the operating-table by gross appearance or frozen section, and immediate complete breast amputation and axillary dissection performed. Forty-three cases were well after five years—80 per cent cures.

In the face of such definite, known end-results, theoretical discussion has no place. Exploratory incision is safe, but only if immediate complete operation follows. Delay for laboratory diagnosis (except by immediate frozen section) destroys nearly all chance of cure.

The mechanism of metastasis in breast cancer offers some explanation of these facts. Handley has shown by a beautiful piece of research that cancer of the breast tends to metastasize, not only by embolism of separate fragments of cancer carried by the lymphatic stream, but also and very commonly by actual continuous growth along the lymphatic vessels, so that a solid cord of cancer may extend from the breast tumor to the axillary nodes. If, therefore, the tumor is excised, or even the breast amputated, microscopic strands of cancer may be cut across with the knife, implantation in the wound may occur and also stimulation by the injury of the cancer cells in the cut lymphatics to more rapid growth and spread.

Why, then, are many surgeons confident, from their own experience, that they have cured breast cancer by two-stage operations? There are two obvious reasons: 1. Failure to recognize the difference in behavior of different types of breast cancer. Certain adeno-carcinomas, when pure and not mixed with true scirrhous or medullary cancer, metastasize late or not at all. If the surgeon removes a breast containing such an adeno-carcinoma and receives from his pathologist a diagnosis of "cancer" and then later performs an axillary dissection, his patient will remain well. She might have remained well without the axillary dissection because no metastasis had occurred, but she is set down in his records as a case of "breast cancer" cured by a two-stage operation.

2. Mistakes in pathological diagnosis. Some pathologists who do not see patients clinically and follow them tend to make histological diagnoses of "cancer" on microscopic cell appearances that are borderline or, at most, not typical scirrhous or medullary cancer. Or they are actually incompetent and call blood-vessels in granulation tissue cancer. I have actually seen this done and axillary dissection later performed on such a diagnosis. Such "cancers" are "cured." They would have been cured if the axilla had been treated by an electronic machine or a cancer paste. No cancer is there. Our statistics of operative cures of cancer of the breast will be worthless until we distinguish sharply between true scirrhous or medullary cancer and the adeno-carcinomas and borderline or doubtful or actually mistaken histological pictures.

2. THE LIP

Here again, definite facts are available. Both Bloodgood and Broders have published extensive end-result studies. The former states that, in his experience, where a correct V-excision has been made, no case has ever had a local recurrence. The primary tumor has been studied in the laboratory as a routine, and if more than "transitional stage" malignancy is present, a neck dissection is subsequently done. One hundred per cent have been cured when no neck glands could be demonstrated pathologically to have metastasis, and 50 to 70 per cent have been cured even when metastasis has been found.

A two-stage operation is, therefore, safe in the case of the lip. This fact is also readily explainable, for squamous cell carcinomas of the lip apparently metastasize chiefly by embolism and not by continuous lymphatic permeation as in the case of the breast, so that excision of a lip growth through surrounding healthy tissue cuts across no strands of cancer in lymphatic vessels. A preliminary excision of the primary growth is of tremendous advantage, because

in the early stages of malignancy, as demonstrated by the microscope, neck dissection is unnecessary, since no metastases have yet taken place.

Is it justifiable to excise a piece instead of the entire primary growth? Why do it? The large growths are obvious clinically. Small lesions are easily excised without deformity resulting, and excision leaves no remaining lesion to act as a precancerous focus.

3. THE SKIN

Considerations for skin lesions are identical for practical purposes with those for the lip. In the case of large lesions situated so that excision would be mutilating, and where diagnosis cannot be made clinically, excision of a piece of the growing edge may be justified, but these cases are rare.

4. THE TONGUE

Here the situation is different because the chances of operative cure, except in very early growths, is remote. Less than 10 per cent of tongue cancers can be cured surgically, while removal of any but small growths involves distressing mutilation. When diagnosis cannot be made clinically, excision of a piece is without doubt justifiable.

But here again, if only a piece of a syphilitic or other ulcer of the tongue is excised the remainder of the ulcer is potentially precancerous. This fact is forcibly illustrated by a record in my possession of a case of small syphilitic ulcer of the tongue, incised for diagnosis, which became fully developed cancer within two months. When a tongue lesion can be excised completely without mutilation, this should be done.

5. THE UTERUS

Among the replies to Greenough's questionnaire, previously mentioned, there was widest diversity of opinion about the removal of tissue from the cervix or the curetage of the fundus for the diagnosis of cancer. In a recent personal communication, Dr. Greenough states that the disagreement is just as pronounced today. His own opinion, based on his experience in his clinic and at the Huntington Hospital, is expressed thus: "While I fully believe that a biopsy should be avoided in every case where a diagnosis can otherwise be made, I fully believe also that a biopsy is to be preferred to delay in awaiting positive symptoms by which the diagnosis can be made. . . . We have practiced biopsy on all our radium cervix cases at the Huntington as a routine, and we have not been able to establish the fact that the biopsy in any way diminished the prospect of cure."

Dr. Thomas Cullen of Johns Hopkins also kindly complied with a request for a statement of his opinion and practice. I quote from his illuminating comments: "We do not want to cut into malignant tumors if we can avoid it, and when removing a surface growth . . . cut around it, but if the surgeon refuses to cut into a suspicious cervix, what will he do? Will he watch the patient week after week, losing valuable time in the occasional case of malignancy, or will he go ahead boldly and remove the uterus in all suspicious cases, thereby doing many unnecessary hysterectomies. How is he going to relieve the many cases of uterine hemorrhage unless he knows just what the patient's bleeding is due to? Personally, I take little or no stock in the view that removal of a small wedge of the cervix is fraught with any danger of spreading cancer if it exists. The cervical tissue is very dense and does not lend itself readily to the escape of cancer cells into the parametrium and further, even if there were danger, I would rather take this than subject the patient to an unnecessary hysterectomy where no malignancy exists.

"From two-thirds to three-fourths of the cases of cancer of the body of the uterus, if operated on fairly early, remain well. Nearly all of these have been diagnosed from scrapings. In former days the hysterectomy was performed several days after the removal of the wedge from the cervix or after curetage—now it is commenced within ten to fifteen minutes—just as soon as the frozen section is diagnosed."

I want to call special attention to the last statement. In one of the largest and best gynecological clinics in America, it is felt that recourse must be had to microscopical examination in the diagnosis of early cervix and fundus cancer; yet, while many cases have been cured by a two-stage procedure, it is the practice now to "play safe," make the diagnosis from frozen section and perform the operation for cancer, if present, at the same sitting.

6. SARCOMA

Small, excisable sarcomata should obviously be completely removed. Nothing is to be gained by preliminary section. In large, connective tissue tumors the question is usually one of avoiding unnecessary operation. If we realize that mutilating operation—amputation, etc.—is useless for malignant sarcoma and unnecessary for benign connective tissue tumors, the advantages of microscopic diagnosis are obvious, but here again, frozen section is the method of choice because some benign tumors (e. g., the myxoma of bone) implant and metastasize if left in place after being cut into.

SUMMARY

In essence, this paper is a plea, not against diagnostic incision of tumors, but against delay between such incision and complete operation. In at least one situation (the breast) the two-stage procedure has been proven to destroy almost all chances of cure in the more malignant forms of cancer. In other locations (the uterus and cervix) the evidence is not so convincing as to absolutely condemn curetage or removal of a piece of tissue and delay for laboratory diagnosis, but the ideal procedure is frozen section diagnosis and immediate complete operation when this gives positive evidence of the presence of cancer.

In the case of the lip, removal of the primary growth complete (rather than incision of the growth) is a safe procedure with dissection of the neck lymphatics at a later time, depending on the microscopic appearance of the primary growth.

For lesions of the skin and of the tongue the same procedure is to be recommended as for those of the lip, except that in large growths of the tongue, where complete excision would be seriously mutilating and the chances of curing cancer remote, diagnostic in-

cision seems justifiable when the lesion cannot otherwise be accurately identified.

Small connective tissue tumors should be removed intact—certain large ones explored for gross appearance or frozen section diagnosis.

391 Sutter Street.

HIGH PROTEIN RATION AS A CAUSE OF NEPHRITIS *

By NEWTON EVANS, M. D., AND E. H. RISLEY, M. D., *Loma Linda, Calif.*

(From the Departments of Biochemistry and Pathology of the College of Medical Evangelists)

Review of selected literature.

Experiments recorded.

It is evident that, to be technically correct in view of present knowledge and ideas, the term "parenchymatous nephritis" should be quite largely avoided.

Animals fed on the high protein ration for prolonged periods showed nephritic changes, without exception.

We believe that the results of these experiments substantiate the correctness of the low protein ration as one of the important measures in the prophylaxis and therapy of nephritis.

DISCUSSION *by T. Addis, San Francisco; Eugene S. Kilgore, San Francisco.*

NO CONSIDERATION of the causes of nephritis can be satisfactory without including recognition of the classification of these conditions. Obviously, a classification may be attempted upon one of several different bases: anatomical, histopathological, clinical or etiological, or a combination of these. It is recognized by all that a satisfactory classification must take etiology into account, and since little has been known of the real causes of nephropathies until recent years, the attempts at classification have been numerous but unsatisfactory and confusing. When some of us were medical students twenty-five years ago, the histo-pathological classification presented included the two main divisions, "parenchymatous nephritis" and "interstitial nephritis" with subdivisions. The term "chronic interstitial nephritis" was used to indicate all contracted kidneys, those in which there was a manifest growth of new fibrous tissue. Although the term "chronic interstitial nephritis" still occurs in some textbooks and in the vocabulary of many physicians the present tendency is to eliminate the term from our nomenclature. It is now recognized that any type of true nephritis, if it exists for a sufficiently long period, ultimately eventuates in the fibrous contracted kidney (secondary contracted kidney), whether the original process is a tubular nephritis, a glomerular nephritis or the very rare true interstitial nephritis; or whether it is the slowly progressive process of the arteriosclerotic kidney (primary contracted kidney).

There seems also to be, even now, a lack of uniformity in the use of the term "parenchymatous nephritis," sometimes used as referring to conditions of primary tubular degeneration and by some used to include both those cases in which the primary change is in the tubular epithelium and the more frequent cases in which the glomeruli are principally involved. It is evident that, to be technically correct in view of present knowledge and ideas, the term "parenchymatous nephritis" should be quite largely avoided.

In the literature of recent years the most quoted authority on the classification of the nephropathies is the monograph in German of Volhard and Fahr, published in 1914. In brief, they recognize:

1. The nephroses—degenerative lesions of the tubular epithelium.

2. The true nephritides—glomerular nephritis—inflammatory lesions primarily in the glomeruli.

3. The scleroses—contracted kidney due to arteriosclerosis of the renal arterioles.

In the first group (the nephroses), with tubular degenerations they recognize an acute course, a chronic course and a final stage with fibrous contracted kidney (one form of secondary contracted kidney).

In the second group (true glomerulonephritis), there are two sub-classes: First, the diffuse form (the more usual), and second, a focal form, each of which may be seen in three stages, all ending in a contracted kidney (secondary contracted kidney).

In the arteriosclerotic kidney (primary contracted kidney) the scleroses group, they divide the cases into benign hypertension cases and malignant hypertension cases, the latter being, according to their view, a combined form of arteriosclerotic contracted kidney and true nephritis.

Notwithstanding the general tendency to follow quite faithfully this classification of Volhard and Fahr, it is evident that from a strictly clinical standpoint it is frequently not possible thus to classify actual cases accurately. The majority of clinical observers are satisfied to caracterize the conditions as (1) acute, (2) subacute, or (3) chronic nephritis, or as a (4) chronic arteriosclerotic or vascular nephritis, not attempting to differentiate clinically between tubular and glomerular nephritis. Such a classification is followed by Newburgh in his recent extensive paper on the etiology of nephritis in "Medicine."

Henry A. Christian presents a practically identical division except that he recognizes the possibility of dividing all *chronic* cases into three groups: the true chronic nephritis, the arteriosclerotic cases, and a combined group, meaning an arteriosclerotic kidney in which the true chronic nephritis process is associated.

ETIOLOGY

The one important etiological factor in true nephritis now accepted by all observers is that of infections, principally the streptococcus infection. As presented clearly by MacCallum, the more intense acute infections, such as general peritonitis and acute septicemias, usually produce tubular changes, while the less severe types of infections, especially the subacute forms, such as those produced by the non-hemolytic streptococci, are associated with glomerulonephritis, including acute, subacute and chronic forms. Acute tubular epithelial degenerations, as is well known, are also caused by various mineral poisons and other toxic substances. The type of these is the kidney of bichloride of mercury

* Read before the County Medical Society, Los Angeles, Calif., January 3, 1924.

poisoning. In toxemias of pregnancy and in eclampsia, there are typical tubular degenerations.

The first to elucidate in a comprehensive manner the important relationship of streptococcic infections to acute and subacute glomerulonephritis was Löhlein, in 1907. His careful pathological and clinical observations have been generally accepted and confirmed by many workers, from both an experimental and clinical standpoint. Probably the streptococcic lesions which give rise to the greatest number of recognized nephritides are those of the tonsils. Among others, Ophüls has published a number of reports of clinical and autopsy studies on nephritis (1912 and onward), showing the importance of streptococcus infection in the causation of nephritis.

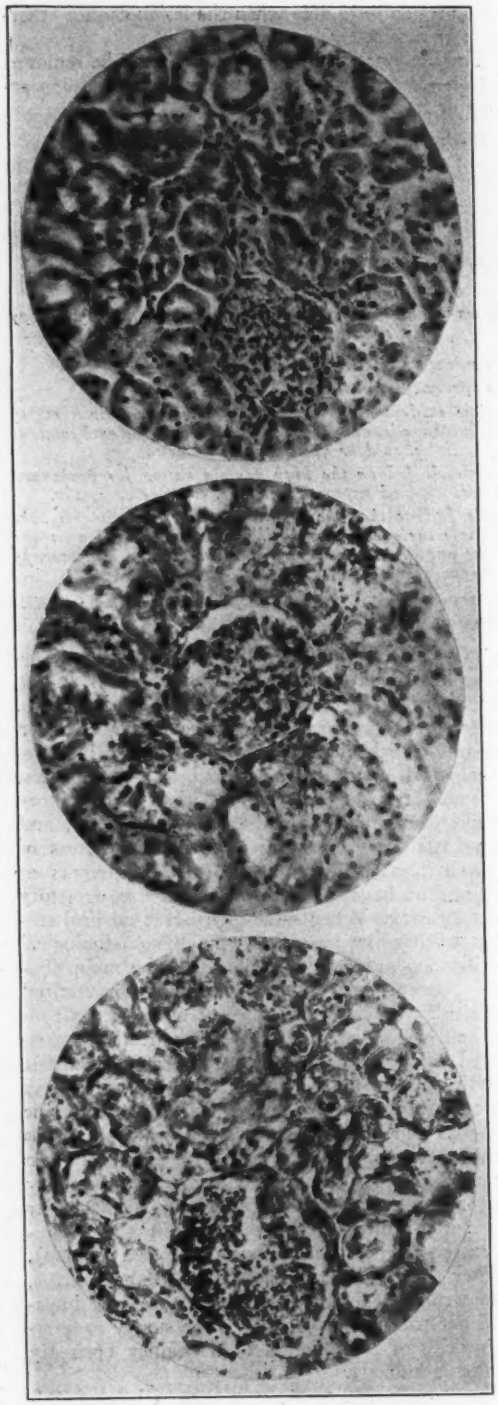
In recent years attention has been called to an entirely different group of causes of nephritis. W. T. Longcope, in 1913, reported remarkable anatomical changes in the liver, myocardium and kidneys, following anaphylactic shock from foreign proteins injected in experimental animals. Later, in 1915, he reported other experiments, showing that similar necrotic and inflammatory changes (though less intense) occurred in the kidneys as well as heart and liver, from the parenteral injection of large doses of foreign proteins in animals not sensitized and in which no anaphylactic reactions occurred. Evidently, the foreign protein in sufficiently large doses exerted a toxic destructive influence upon the kidney tissue; but we should not overlook the fact that in these experiments the protein material was introduced directly and was not ingested as a food.

In 1919, Newburgh conceived the idea that possibly the products of nitrogenous metabolism, which normally do not injure the kidney, are capable of producing serious damage if the kidney is called upon to eliminate them in excessively large amounts. This conception was based upon the fact that, although the normal kidney is capable of secreting such toxic mineral salts as mercuric chloride in small amounts, the tubular epithelium suffers severely if it is called upon to handle this poison in stronger dilution. He accordingly undertook to ascertain the effects upon the kidneys of rabbits, of feeding excessive amounts of protein food. In several series of experiments he used different proteins: egg-whites, soy beans, and

SUMMARY OF RAT-FEEDING EXPERIMENTS

High Protein Diets

Diet	No of Rats	Growth	Albumin in Urine	Per cent showing definite Microscopic Pathology Tubules	Glomeruli
Controls ordinary diet	10	Good	(No. tested, 9) Pct. positive, 11 trace only	0	0
Casein	4	Poor	(No. tested, 0)	100	25
Casein and wheat gluten	4	Fairly good	(No. tested, 3) Pct. positive, 100	75	75
Meat	6	Good	(No. tested, 2) Pct. positive, 100	83	33
Nut meal	15	Poor	(No. tested, 2) Pct. positive, 100	47	33
Peanuts	4	Fair	(No. tested, 1) Pct. positive, 100	75	25
Soy beans	5	Fair	(No. tested, 1) Pct. positive, 0	80	60
Wheat gluten	8	Poor	(No. tested, 6) Pct. positive, 100	25	75



TOP

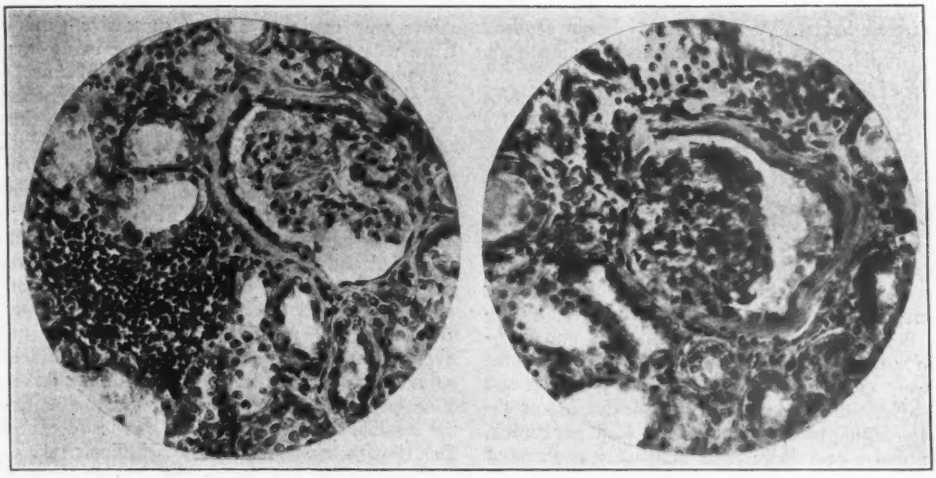
Ordinary Diet.—Normal kidney.

CENTER

Wheat Gluten Diet.—Partially hyalinized glomerulus.

BOTTOM

Meat Diet.—Exudate in Bowman's capsule. Extensive tubular degeneration.



Casein and Wheat Gluten Diet.—Round cell infiltration, fibrous and epithelial hyperplasia of Bowman's capsule.

Casein and Wheat Gluten Diet.—Changes similar to photograph above, but with exudate in Bowman's capsule and adhesion of glomerulus to capsule.

RAT-FEEDING EXPERIMENTS, HIGH PROTEIN DIET (WHEAT GLUTEN)

Number	Diet	Months on Diet	Weight Grams	Urine	Pathology	
					Tubules	Glomeruli
54	Wheat gluten	6	34-154	Not tested	Slight pyknosis	Badly diseased. Hyaline degeneration
33	Wheat gluten	9	64-165	Not tested	Normal	Normal
55	Wheat gluten	14	55-197	Albumin +	Some degeneration with pyknosis	Exudate with definite changes
56	Wheat gluten	14	32-111	Albumin +	Moderate pyknosis	Some adherent. Some with exudate
57	Wheat gluten	14	47-160	Albumin +	Some pyknosis	Some thickened and fibrous
58	Wheat gluten	15	61-164	Albumin +	Normal	Moderate changes. Thrombi in capillaries
59	Wheat gluten	15	32-105	Albumin +	Normal	Exudate and epithelial proliferation in a few
60	Wheat gluten	15	62-168	Albumin +	Normal	Small exudate in a few

RAT-FEEDING EXPERIMENTS, HIGH PROTEIN DIET (CASEIN AND WHEAT GLUTEN)

No.	Diet	Months on Diet	Weight Grams	Urine	Pathology		
					Tubules	Glomeruli	Other Findings
39	Casein and wheat gluten	7	60-239	Albumin +	Some contain casts	Many seriously damaged. Much exudate	
41	Casein and wheat gluten	7	83-172	Albumin 0	Normal	Some contain exudate	
42	Casein and wheat gluten	7	85-138	Albumin +	Badly damaged. Degenerated	Degenerated and fibrosed	New fibrous tissue around glomeruli
43	Casein and wheat gluten	7	94-200	Albumin +	Advanced degeneration. Hypertrophied. Contain casts	Enlarged and many fibrous	Much new formed fibrous tissue

casein. He found that when the animals were killed and the kidneys examined, constant evidences of renal injury were found after feeding excessive amounts of these proteins. Apparently, the soy beans and the egg-whites produced greater injury than the casein. Fifteen grams of casein daily in the average-sized rabbit produced no injury, while 30 grams constantly produced lesions. He was able to recognize nephritis in all stages—acute, subacute, and chronic—ending in typical secondary contracted kidney. The urines contained albumin and casts, and the blood chemistry determinations showed a constant retention of non-protein nitrogen.

In an effort to determine the specific substances responsible for the nephritis lesions, he made tests which proved conclusively that urea in the amounts present in the experimental animals was not the substance at fault.

These facts reported by Newburgh suggested the desirability of confirming his findings, but it seemed to us that rats would be more suitable material on account of greater similarity to human beings in

their dietetic habits. We accordingly began at once, 1919, a series of feeding experiments on white rats, which we are reporting at this time.

In the May, 1923, number of the Johns Hopkins Hospital Bulletin, there appeared a report of similar experiments in which rats were used by E. V. McCollum and two of his associates. Their experiments were also suggested by the report of Newburgh's work. In beginning their experiments they were impressed by the idea that in Newburgh's rabbit-feeding experiments it appeared that the diets of the animals were abnormal in other features besides being high in protein; for instance, these diets were evidently deficient in essential mineral salts and probably in vitamines. Accordingly, their experimental diets were carefully planned so as to give the rats a well-balanced diet, except in the one feature of abnormally high protein content (31-41.3 per cent). The excessive protein in their mixture was attained by adding various quantities of casein, liver and legumes to other natural food substances. Their final results proved to be in entire accord with those of Newburgh, as indicated by the following quotation: "Notwithstanding the fact that the rats apparently did so well on these diets, they showed kidney damage, without exception. . . . There is apparently no cause other than the excretion of excessive amounts of the end products of protein metabolism to which we can ascribe this renal damage."

These observers also agree with the statements of Newburgh that the histological kidney changes are primarily those of the tubules rather than of the glomeruli.

In the reports of these rat-feeding experiments at Johns Hopkins, there is no indication of any urinary examination of the experimental rats. In Newburgh's rabbit experiments, both albumin and casts were reported. Certain blood chemistry observations, however, are reported in the rat experiments.

In Newburgh's most recent article, he describes several series of experiments on human subjects, both normal and nephritics, which show definite injurious results upon the kidneys following the ingestion of excessive amounts of protein in the form of meat. He also argues from known facts regarding the relative infrequency of nephritis in racial groups habitually living upon a low protein dietary that such a diet is less taxing to the kidney parenchyma than the high protein dietary.

EXPERIMENTS

As mentioned above, in 1919, immediately following the reports made by Newburgh, we undertook feeding experiments with some foods that seemed to be suited for the purpose. Our work has continued more or less steadily from that time to the present and, although covering only about sixty animals, yet it seems to be of enough interest to report. White rats were chosen as the best suited animals, since they are omnivorous, are comparatively easy to care for, they live well in captivity, and have a rather short span of life. This last point makes it possible to follow the test long enough to be comparable to man, and yet not consume too large an amount of time in getting the results.

The animals were kept two in a cage, but no effort was made to follow successive generations. Care was taken to keep everything in as favorable a condition as possible, so that other influences, aside from the diet, would be practically nil. The animals were weighed and checked up from time to time and account made of their progress. In spite of all our efforts, some of the animals died in the early part of our work, probably due to the one-sided diet which they were receiving. This accounts for some of the low ages given in our reports, as all rats were autopsied and the kidneys studied carefully, regardless of the time they had been under the dietary restrictions. In about one-half the cases, specimens of urine were collected and tested for albumin qualitatively by such tests as Heller's and acetic acid and potassium ferrocyanide. We regret that this was not done with the entire series, but did not at first see the possible significance of such a procedure, and further thought that it would be a difficult task to collect the urine. Collection and examination of the urinary specimens was later simplified and was followed throughout.

The following data give some idea of the character of the foods used:

1. *Casein* — The commercial product and one made in our own laboratory were used, the per cent of protein ranging near 75 per cent. The product was finely ground and was fed to the animals in that form.

2. *Meat*—The meat used was the flesh of rabbits, as we had a surplus stock of those animals on hand at the time. The meat was not allowed to spoil, but was hung in the cage in small quantities at a time. The protein was estimated as averaging 20 per cent, the fat as 12 per cent, and the other solids at about 2½ per cent, making the total solids 34½ per cent. This would make the protein about 58 per cent of the total solid water-free material, exclusive of the bones which were not eaten in any amount.

3. *Nut Meal*—A peanut product having 55.5 per cent protein. This was also used in the form of a finely ground powder.

4. *Peanuts*—Ordinary shelled peanuts. The samples we used averaged about 27 per cent protein. These were fed to the animals whole.

5. *Soy Beans*—Ordinary product from the store. Averaed 39 per cent protein. Fed to animals whole.

6. *Wheat Gluten*—Made from flour by washing out the starch. The sample used ran 44 per cent protein. Finely ground and fed to animals in this form.

7. *Greens* — Ordinary alfalfa, lettuce, beet-tops, or similar products. Proteins very small in amount. These were fed only in very limited amounts, and were designed to keep the animals going better, so far as vitamines and salts were concerned.

We are aware that there are several imperfections in our technic. Perhaps the most important of these is the fact that our dietaries were not balanced in a way that would give reasonably near complete nutrition. Some of our animals showed definite nutritional disturbances from the lack of vitamines, the lack of which was only in part supplied by the green stuffs used. It is interesting that McCollum and his associates, after very careful checking up the

diet from every viewpoint possible, got very similar results, so far as kidney damage is concerned. The work is not as complete in details as might be desired; for example, the percentage of albumin in the urine might have been estimated, the urine might have been studied for the detection of casts, and the blood chemistry might have been studied, although it is rather difficult to get blood from rats during life without injuring them seriously and thus probably bringing other factors to play on the problem.

A series of ten control rats was used to get information as to what might be expected in the examination of the kidneys of normal animals. These rats were fed upon mixed grains and greens. The grains used were wheat, kaffir corn, and maize, with an average protein percentage of about 10. Varying periods of time were taken so as to give date for various ages. As will be seen by the tables, only one showed albumin in the urine and that only a trace, and none showed microscopic change of any moment in the kidneys. We are, therefore, justified in concluding that rats living upon an ordinary diet for periods of sixteen months or less are practically free from kidney lesions.

In studying the animals fed upon the special diets, it is of interest to compare the relative frequency of tubular lesions and glomerular lesions. Our summaries show that the tubules of the kidney are more susceptible to the injurious effects of the high protein diet than are the glomeruli. This is well seen when the average per cent of damage is determined for all the groups, the tubules showing 69 per cent; the glomeruli only 46 per cent. By comparing the different groups on the different dietaries, it appears that in the case of wheat gluten the glomeruli are involved more than are the tubules, while in all other cases the reverse is true. The explanation of this is not clear, and whether any significance should be placed upon it is questionable.

Taking the time factor into consideration, as well as the percentage of protein, it appears that the damage to the kidney is in direct proportion to the content of protein in the diet, with the exception that soy beans and peanuts, although less in protein content, have more marked effects than some of those foods much higher in protein. These products were fed in their original form without grinding, and thus were possibly less completely utilized.

Of the different high protein dietaries used, the meat diet appeared to have the most favorable influence upon the growth of the animals—probably because it more nearly approached the ideal diet in presenting the necessary food elements. Further, the rats with meat had as much of the greens as did the others, but in no case was an excess of the green stuffs used. Next to meat, the animals with the combination of wheat gluten and casein made the best growth. Those fed upon casein, nut meal, and wheat gluten alone did poorly and suffered a great deal from malnutrition. In our early work some of the animals died before sufficient time had elapsed to show marked effects upon the kidneys. Later, the addition of small amounts of greens helped to keep the experiments going for longer periods of time.

The most serious lesions in the kidneys were found in the rats fed upon the mixture of casein and wheat gluten. In two of these animals fed only seven months on the mixture, very advanced and marked lesions were observed in both tubules and glomeruli. Advanced changes were also found in those fed upon nut meal for periods of ten months or longer. In two cases fed on meat ten and eleven months, the changes were marked. In all of these cases there was definite replacement of renal parenchyma by connective tissue.

The accompanying tables make a further detailed discussion of the kidney findings superfluous, and the characteristic histological changes are illustrated by the photographs reproduced herewith.

SUMMARY AND CONCLUSIONS

1. The control animals fed on an ordinary diet for corresponding periods showed no kidney changes.

2. Animals fed on the high protein ration for prolonged periods showed nephritic changes, without exception.

3. We believe that the experiments carried out by Newburgh, McCollum and others, as well as by ourselves, prove definitely that high protein diet is capable of producing true nephritis in the animals used.

4. There is no question but that there are other factors, such as bacteria, bacterial toxins, mineral poisons, and other toxic materials which are basic in the etiology of nephritis, but it seems very possible that the high protein ration generally used by peoples in temperate zones is a definite etiologic factor.

5. We believe that the results of these experiments substantiate the correctness of the low protein ration as one of the important measures in the prophylaxis and therapy of nephritis.

6. Although the experiments herewith reported were extreme applications of the high protein ration, yet, taking into consideration the comparatively short duration of the test, in some cases not over one-seventh of a rat's life, it seems very plausible that 25 to 30 years, corresponding to one-third or one-half of a man's life, of the moderately high protein dietary would produce some of the damage we see today in the cases constantly coming before us.

7. Since meat is the protein food used most abundantly (Sherman says we use 180 pounds per capita in the United States per year), it would seem wise at least to limit its use in the average dietary to one-half the present quantity consumed, and to correspondingly increase the use of fruits and vegetables, which are low in protein and at the same time yield vitamines and salts of great value.

DISCUSSION

T. Addis, M. D. (Stanford Medical School, San Francisco)—The paper demonstrates that abnormalities in the structure of the kidneys may be found in rats which have been given a diet which is high in protein. But there seems to be room for considerable doubt as to whether or not these anatomical changes are due to the high percentage of protein in the food or to some other factor or factors associated with the diet.

The question of the effect of high protein diets is, as a matter of fact, very complex, and the work which has been done has given, apparently, contradictory results. Chalmers Watson (Food and Feeding, Appendix, November, 1910) first reported that degeneration of the renal

tubules, as well as various other extra-renal lesions, result from giving much protein to rats, but Drummond, Crowden, and Hill (Jour. of Physiol., 1922, 56, 413) fed rats for 100 days on a diet which contained 83 per cent of casein, and were unable to find any defect in the kidneys. They suggest that Chalmers Watson's results may have been due to vitamine deficiencies. Newburgh's work on rabbits has been referred to by the authors, but it may be noted that the renal lesions he produced bore no resemblance to true nephritis as seen in man, and I have been unable to confirm his findings as to the effect of a large ingestion of meat on the urinary sediment. The lesions found by Polvogt, McCollum, and Simmonds seem to have been of a quite minor nature, and no very definite changes in the chemistry of the blood are reported. Osborne, Mendel, Park, and Darrow (Proc. of the Soc. of Exper. Biol. and Med., 1922-23, 20, 452) found no microscopical evidence of inflammatory or of degenerative changes in the kidneys of rats fed on diets which contained 75 per cent of either casein or meat; and still more recently Osborne and Mendel (Am. Jour. Physiol., 1924, 68, 143) state that there were no pathological changes in the kidneys of rats which had subsisted on pure protein or protein-fat diets, though they did note renal hypertrophy, whereas in Drummond, Crowden, and Hill's experiments the weights of the kidneys of the high protein fed rats were within the normal limits of variation.

The experiments given in this paper by Dr. Evans and Dr. Risley form an interesting but not, I think, a decisive contribution to the subject. In view of the complete disagreement in the results obtained by different investigators, it would seem that the question as to whether a high protein intake produces renal damage is still unanswered.

EUGENE S. KILGORE, M. D. (391 Sutter Street, San Francisco)—The authors have made a valuable contribution, which, together with the reports of Newburgh, McCollom et al., throws strong suspicion on high protein feeding as one cause of nephritis; and Dr. Addis has pointed out reasons for withholding final conclusions on the relation of protein diets to human nephritis. A further reason for conservatism is the universal difficulty in converting the results of animal experiments into conclusions for man. The rat experiments will have added significance, if they can be confirmed with larger series and with some of the experimental difficulties pointed out by the authors overcome. The comparative span of life of the high protein and normally fed rats would be interesting. And finally, in view of the disagreement of some of the investigators on the nature and extent of lesions in high protein fed animals, it would add materially to the weight of future reports if the possibility of subconscious researcher's bias could be eliminated: e. g., if all or at least the pathological examinations could be made and recorded by one who at the time was uninformed as to whether he was examining test animal or control. This is an experimental precaution seldom taken in medicine, but one which, if followed generally, would save our literature from many contradictions.

In favor of the results of these experiments as applied to man, it must be said that the impressions from clinical experience and insurance statistics are in harmony with the idea that diet is of considerable importance in the etiology of kidney, as well as other degenerative changes. The overweight group, who comprise largely the group of overeaters, have a higher incidence of chronic degenerative diseases and a correspondingly shorter life span.

DOCTOR EVANS (closing)—It would seem that the opinion expressed by Doctor Addis in his discussion of the results of these experiments is of some weight, inasmuch as there is apparent discrepancy in the results of similar experiments in the hands of different workers. It is also true that in our diets, in addition to the high protein content, there may have been a comparative deficiency in vitamins and in the mineral salts. On the other hand, I question the accuracy of some of Doctor Addis' interpretation of available information. He states that the kidney lesions in Newburgh's rabbits have no resemblance to true nephritis as seen in man. Newburgh states in his report of 1919 that the rabbits developed acute, subacute, and chronic nephritis; and it is my impression that the photomicrographs which he presents exhibit lesions which histologically bear considerable resemblance to the effects of nephritis in man.

Regarding the results of Polvogt, McCollum, and Simmonds in their rat-feeding experiments, they state unequivocally that the high protein diets produced an unfavorable influence upon the kidney tissues.

In the observations of Drummond, Crowder, and Hill, as quoted, the kidneys were examined after 100 days of feeding. I doubt whether that period was long enough to produce the characteristic results. In our work and that of Polvogt et al., the periods were much longer—from six months to fifteen months, in our experiments. In the report of Osborne and Mendel on experiments for the purpose of determining the effect of diets deficient in preformed carbohydrates, there is no detailed information as to what proportion of the animals were examined histologically or at what stage in the feeding the kidneys were thus examined.

Doctor Kilgore very properly emphasizes the importance of unbiased observation of suspected lesions. We purposely made our microscopic observations under conditions which would insure this. No information was available, to the one of us who did the microscopic work, as to the nature of the diet in any given case until after the observations were made. The dead rats were brought to the pathology laboratory and recorded by number only. Under these working conditions, no abnormalities were recorded in the ten control animals on the normal ration. The lesions presented in the photographs shown illustrate the conditions observed in the animals with the abnormal diets.

Tinkering With Health by Tinkering With Milk—The California legislature shows poor judgment in starting out to solve the really serious and extensive milk problem by attempting to tell the hospitals what kind of containers their milk may be served in. Hospitals have the facilities and are perfectly competent to judge the quality of food, drink or medicine they serve their patients. Furthermore, they are already legally responsible for any untoward results that may happen to their people because of carelessness or ignorance.

California certainly does need, and needs badly, some intelligent legislation upon its milk problem, but before such legislation can be worth while there must be better enforcement of some of the existing complicated laws upon the subject and an intelligent report prepared by personally disinterested thoroughly qualified students.

There are several public health features of milk more important than that it shall be served only in certain kinds of containers. The typhoid germ grows just as luxuriantly in a quart bottle of milk as in a tin can, and, furthermore, it is no respecter of labels. These germs have recently grown in milk in bottles and other containers to the cost of health and life in our state and elsewhere.

And We Call Ourselves "Free"—"Thirty years from now, if we continue at the present riotous rate, taxes will be $100 per capita," says Senator Borah, "and 40 per cent of the national income will be demanded for public expenses. There will be an officer for every ten persons in the republic, and in every activity we will find ourselves under the surveillance of a bureau. We will still have a republic in name, but a bureaucracy in fact—the most wasteful, the most extravagant, the most demoralizing and deadly form of government which God has ever permitted to torture the human family."—Illinois Medical Journal.

Doctor or M. D.—The title of Doctor seems to have little significance any more, since it may be applied to the osteopath, the chiropractor, the optometrist, and a vast army of less well known but insufficiently qualified practitioners of the healing art. It is, therefore, of real importance that the Doctor of Medicine be careful always to distinguish himself by his degree of M. D. rather than merely by the meaningless title of Doctor.—The Atlantic Medical Journal, March 1925, Editorial.

CONGENITAL NASAL ATRESIA

By Francis L. Rogers, M. D., *Long Beach, Calif.*

It is important that the nasal tract anteriorly and posteriorly be cleared of obstructions prior to the operation for atresia.

The removal of a section of the posterior end of the nasal septum is important in securing a free and permanent opening.

The effect of continuous mouth-breathing upon the nutrition and general health of the child is very marked. In bilateral atresia narium cases, the very prompt and marked improvement in this case illustrates the point that in these cases imperfect oxygenization and physical exhaustion from labored breathing, rather than infections, are the greatest factor unfavorably influencing general nutrition of the child.

A better understanding of this condition, careful routine examinations of the nose, with a probe at birth by obstetricians, would no doubt reduce infant mortality and relieve embarrassment resulting from faulty diagnosis by family doctor or pediatrist, and generally conduce to greater efficiency in our profession.

Discussion *by Harvard McNaught and C. Edgerton Carter.*

JUDGED by the available literature on the subject, congenital nasal atresia is a rare condition. Many nose and throat textbooks do not even mention it. Others of a considerable number examined give it but very brief mention. Otto, in 1830, was the first to discover the condition which he found at post mortem. It was first reported in a living subject in 1854 by Emmert. Schmiellglow, in 1904, first tabulated a list by collecting sixty-four cases, and up to the present time (1924) there have been about 165 cases reported in the literature of all countries.

In a questionnaire presented to a group of forty nose and throat specialists recently, but two reported ever having seen a case of congenital bilateral atresia of the nasopharynx.

The cause of congenital atresia of the choana is somewhat clothed in doubt, but it is believed that the primitive nasal capsule which develops as a part of the primordial cranium, and which extends forward beyond the anterior portion of the notochord, forms a core for the frontal nasal process, producing a broad mass of tissue changed in form somewhat which approximates the lateral nasal and maxillary processes. By this approximation of the nasal structures, the ectodermal coverings are brought abnormally into contact, the processes become united and the atresia results. This all occurs in the early months of the intra-uterine life during the formation of the foetal head.

Nasal atresia is believed to be much more common than the present available literature would indicate. Some writers who have made an intensive study of the subject state their belief is that many deaths at birth, or within the first forty-eight hours after birth, where the cause of death is not positively known, are attributable to this form of asphyxiation. If this be true, the subject is one of very much greater importance than has heretofore been regarded, and offers added reason for bringing the subject to the attention of the profession, particularly to obstetricians, general practitioners as well as the rhino-laryngologist.

Richards says mouth-breathing is always an acquired habit. Hence, a child born with complete nasal obstruction almost immediately becomes cyanotic and in distress cries. The crying establishes mouth-breathing, which temporarily relieves the cyanosis. When the child stops crying it soon becomes cyanotic again, and it frequently becomes necessary to aid the child's early respiratory acts by mechanically elevating the soft palate and pulling the tongue forward, repeating the practice until the mouth-breathing habit is acquired.

Statistics compiled in 1918 by McNaught of San Francisco indicate that the condition occurs more often on the right than on the left side, and much more often unilaterally than bilaterally, but accurate percentages for either are not available.

When one nostril is occluded, the patient may not manifest the most marked symptoms of obstruction. Where atresia is complete on both sides, mouth-breathing is the most conspicuous symptom. The persistent presence of secretions of a peculiarly opaque mucilaginous consistency in the nose which cannot be expelled by blowing the nose, or the appearance of a watery discharge from the nose when the child cries from increased lachrymation, should always suggest the presence of congenital nasal atresia. Headache, deafness, and anosmia are said to exist in most cases, but were not observed in any of the three cases I shall report. The presence of adenoids, polypi, or other tumors benign or malignant, should always be determined and ruled out in every case of suspected atresia.

The treatment of congenital atresia is fundamentally surgical. Authorities differ somewhat as to the time of choice, varying from the first to the tenth year. A majority agree that it should be undertaken as early in life as there is sufficient development to admit the operator's forefinger into the nasopharynx, and the nostril large enough to admit of visualizing the field of operation and the use of instruments required in the nose at the point of occlusion.

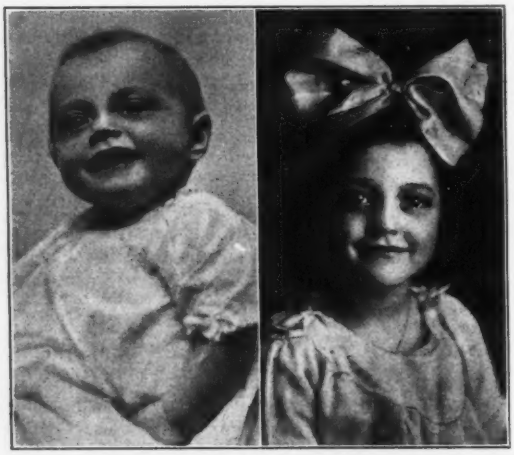
I have seen and recognized, in thirty years' practice as a rhinologist, three cases of complete atresia of the choana narium. The first case was seen in 1897, the second in 1907, and the last—the principal subject of this paper—November 5, 1921. The first two were unilateral, the last was bilateral. All three occurred in females, and all were under 10 years of age.

The first case, in a well-developed child of 4 years, was unilateral and on the left side. The parents were healthy farming people in the Middle West.

The second case was a girl of 7 years, the daughter of an Italian musician residing in Long Beach, California. The atresia was on the left side, and was complete. This case was operated, using a technique then recommended in textbooks, but with a result not wholly satisfactory, the lumen of the choanae when healed being smaller than was desired, resulting in a slight whistling sound when mouth was closed and patient was taking exercise.

The third, Harriet H. was born January 4, 1917, in a Brooklyn, New York, hospital. She was a first child. There is no history of hereditary disease or abnormality in parents, both being strong, healthy young Americans, aged about 22 years. The child

was a "war baby" and weighed at birth twelve pounds. Delivery was very tedious, lasting four days, but was completed without instrumentation. From the moment of birth, the child had great difficulty in breathing. Almost constant attention of a nurse was required for several days to relieve attacks of choking and cyanosis. It does not appear from any history obtainable that the real cause was discovered at that time. At the age of 11 months, and again at 2½ years, adenoids were diagnosed and removed without general anesthesia at Brooklyn and New York clinics. Neither operation seemed to have afforded any material relief to the patient, and no intimation was ever given the mother of the discovery of any other cause for her constant mouth-breathing and other symptoms. The case was referred to me by a colleague November 5, 1921, with the suggestion that she had adenoids and infected tonsils. Tonsillectomy was performed under general anesthesia on November 8, 1921. No adenoids were found, but the real cause, a bilateral nasal atresia, was discovered, located at or about opposite the posterior end of the vomer. The nasopharynx was rather shallow, but of average width. The occluding wall was firm, smooth and bony, free from granular vegetations or other evidence of disease. The end of the vomer projected slightly backward, forming a well-defined central ridge somewhat wider than the normal edge of the nasal septum. I informed the mother of the condition present and nothing further was attempted until April 18, 1922, when under ether anesthesia the case was operated, and we believe the defect most successfully remedied by the following procedure:



Before operation After operation

Both anterior nares were cleansed and packed with gauze soaked in a 1-3000 solution of adrenalin. With a well-darkened operating-room, a hooded lamp, and a head-mirror, I was able to visualize the field of operation in both nostrils very well. The left middle turbinate was found oversize, the lower margin being twisted and tightly pressing against the nasal septum, opposite which a small bony spur projected. The turbinate was removed, likewise a small button of the bony septum opposite it was resected submucously. This provided a clear field on both sides. An incision through the overlying mucous membranes was made from top to bottom of the septum at the junction of the septum with the occluding bony wall, continuing it across the floor to the outer wall of each nostril. Elevating the membranes, including the periosteal covering of the false bony wall, each was turned in a flap outward and forward against the outer nasal wall. From the primary incisions the mucous membrane and periosteum were then dissected forward on septum and floor about one-fourth of an inch. At that point the bony septum was cut through parallel to the primary incisions. The angular knife and a Freer chisel made the horizontal cut across the floor and upward along the outer wall and vault. The false bony walls were then removed through the nasopharynx with a forceps, using the forefinger in nasopharynx as a guide. A small glass pipette on the regular Yankauer suction apparatus served well to keep the nasal field free from blood and mucus. All bony edges were then carefully smoothed with a curette, and the deflected mucous membrane folded backward over the denuded bony surfaces. A three-eighths inch rubber drainage tube was placed in the floor of each nostril, extending well into the pharynx and projecting one-half inch outside the nasal opening. Two folds of half-inch gauze were impregnated with alboline and were inserted in nostrils above the tubes. A strip of O. Z. adhesive, three-fourths inch wide, was placed from cheek to cheek under the tip of the nose, to which the projecting rubber tubes were stitched for added security. Alkaline irrigations through the tubes were used daily after the second day. Gauze packing was removed on the third day, drainage tubes removed for cleansing and replaced on the sixth day and permanently removed on the eighth day, after which daily irrigations and practice in nasal breathing were begun and have since been kept up with regularity. The child had to be taught to blow its nose and to breathe nasally, but at no time after removal of packing was there any occlusion of either nostril that was not readily relieved by irrigation.

From birth the child had been sallow, pale, undernourished, restless at all times, and mentally retarded. Her facial expression suggested the simple-minded. She was nearly four years old before able to make words into sentences, and until last operation her speech was so imperfect as scarcely to be understood even by her mother. When last examined, June 10, 1922, she was able to breathe comfortably from either nostril with mouth closed, and to sleep with closed lips. She now speaks quite distinctly, has an increasingly good vocabulary, is mentally alert, and her general physical condition has improved greatly. The mother, who is the wife of a naval officer, moved to Seattle, Washington, but reported regularly once each month until July 1, 1923, reporting that her condition in every way seemed that of a normal child. On March 20, 1924, I wrote the mother, requesting a final report and requesting that she take the child to Dr. J. Thomas Dowling of Seattle for a critical examination, and his report to me is as follows: "I am pleased to report that her

nose is in fine condition. She breathes quite normally, as a child should with a normal nose. I think your work has been entirely successful."

SUMMARY

1. It is important that the nasal tract anteriorly and posteriorly be cleared of obstructions prior to the operation for atresia.

2. The removal of a section of the posterior end of the nasal septum, which in this case was considerably thickened, is important in securing a free and permanent opening.

3. The effect of continuous mouth-breathing upon the nutrition and general health of the child is very marked in bilateral atresia narium cases. The very prompt and marked improvement in this case illustrates the point that in these cases imperfect oxygenization and physical exhaustion from labored breathing, rather than infections, are the greatest factor unfavorably influencing the general nutrition of the child.

4. A better understanding of this condition, careful routine examinations of the nose with a probe at birth by obstetricians, would no doubt reduce infant mortality and relieve embarrassment resulting from faulty diagnosis by family doctor or pediatrist, and generally conduce to greater efficiency in our profession.

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DISCUSSION

HARVARD MCNAUGHT—Congenital occlusion of the nares probably occurs much more frequently than is supposed. The reported cases are comparatively few, but the discovery of some cases, post mortem, leads me to think that it is more common than the statistics would indicate. Obstetricians and pediatricians should be on the lookout for the cycle first described by Richardson and referred to in the foregoing paper, viz.: cyanosis—crying, which relieves the cyanosis, and so on, and when this is seen, think of this condition.

My own experience has been confined to three cases: one of complete unilateral bony occlusion, and two of partial, incomplete cartilaginous occlusion, all in adults. The two cartilaginous ones were easily corrected, as the septal occlusions were then easily bitten out. No attempt was made to make a mucous membrane flap, as the cartilaginous edges do not show the tendency to granulate that bone does. The case of bony occlusion, however, which I described in a paper read before the California State Medical Society, April, 1917, presented a different problem. This patient was operated by me in January, 1915, by a method I had conceived, viz.: to approach the occlusion by means of a submucous septum operation, extending dissection over the anterior face of the bony wall, and after removing the wall use the membrane to cover the floor and roof of the choana. The execution of the operation was easy until I attempted to remove the bony occlusion, which was found too thick to bite out, and chiseling was deemed dangerous owing to the proximity of the eustachian tube. I then improvised the method which Doctor Rogers has advocated—removal of part of the posterior edge of the nasal septum, which gave complete relief to the patient and did not close. This operation was conceived and performed January, 1915.

In April, 1915, Thomasson independently described an operation essentially similar to mine. I relate this case to call attention to the possibility of meeting with a very thick wall and to endorse the remarks of Doctor Rogers in regard to removing a part of the posterior edge of the septum. Where the wall is thin, an operation such as I originally intended could easily be done, and should prevent undue closure from granulation.

C. EDGERTON CARTER, M. D. (Brockman Building, Los Angeles)—Congenital nasal atresia, as presented by Dr. Rogers, is distinctly a contribution to the literature of congenital malformations.

To the pediatrist, the congenitally cyanotic infant naturally suggests deficiency of the circulatory or respiratory system or both. That this condition may result from complete occlusion of the posterior nares, is not so well appreciated.

The paucity of case reports by no means reassures us that unilateral atresias, at least, may not have been overlooked within our own experience.

At any rate, Dr. Rogers' report will put us on our guard that no "blue babies" escape this amplification of our differential diagnosis.

This one symptom of cyanosis, which ceases during crying or mouth-breathing, differentiates nasal atresia from cardiac incompetence.

Atelectasis, the other not infrequent respiratory complication, reveals in the infant a rapid, shallow respiration, with cyanosis constantly present, though varying in intensity. Radiographs, of course, further illumine the clinical picture, be it cardiac or respiratory.

One feature perhaps not sufficiently emphasized in Dr. Rogers' able article is that of early diagnosis. The comparatively simple procedure of incising the occluding postnasal membrane with immediate relief of the suffocative and irritative symptoms is so pre-eminently preferable in our judgment to that of an operation delayed for years, that the writer wishes to heartily second Dr. Rogers in advocating a more careful early differential diagnosis.

Furthermore, there is a mental and physical retardation aside from the resulting developmental deficiency which makes early diagnosis desirable.

These three reported cases were aged 4, 7, and 5 years, respectively, and undoubtedly were correspondingly handicapped during the pre-operative years.

The operative technique elaborated by Dr. Rogers impresses one as comparatively simple, effective, and practical for the skilled operator.

DOCTOR ROGERS (closing)—I cannot but feel gratified at these approving expressions from the gentlemen who have discussed my paper. If their words and what I have gleaned from a rather meager literature and a necessarily limited personal experience concerning congenital nasal atresia serves to arouse the obstetricians, pediatrists, rhinologists, and the greater body of general practitioners who read CALIFORNIA AND WESTERN MEDICINE to a realization that many deaths heretofore registered as "still births," "heart failures," "blue babies," and "cause of death unknown" may be and probably are cases of nasal atresia, then this paper and discussion will seem worth while.

To the equipment of every obstetrician, I would suggest be added a small six-inch ball-pointed silver probe, and recommend that their duty be not complete in any case until they have passed this probe into the mouth by way of each nostril of every new-born baby they deliver. The procedure is simple and practically painless, and will promptly recognize any nasal occlusion and direct a course of action that will save the life of many and perhaps all such defectives who otherwise may not live longer than a few minutes, hours, or days.

Herbalogists Arrested Again—Some of the "Herb" "Doctors" have been again arrested for practicing medicine without a license. "Besides selling herbs, it is charged the 'doctors' diagnosed ailments which is against the law. They were released on a $100 cash bail by Police Judge Lazarus."

Some of these "Chinese Herbalogists" openly advertise their illegal claims in matter that circulates in the United States mails. We will tell the outcome of these arrests later.

THE INTENSIVE TREATMENT OF CONGENITAL SYPHILIS (FINAL REPORT)

By HERMANN SCHUSSLER, JR., M. D., *San Francisco*

(From the Division of Pediatrics, Stanford University Medical School)

A safe and efficient plan of treatment for congenital syphilis, with suitable variations for special types, is presented.

The methods described are easy to carry out, require very little apparatus or technical skill, and cause practically no discomfort to the patient.

The principle involved is a series of vigorous attacks on the spirochete, with the various available remedies, as the best means of avoiding the Wassermann-fast state.

The evolution of the method during 1920-1922, and its extensive use since then, both in private practice and several clinics, has been followed by eminently satisfactory clinical and serological results. It is therefore recommended for routine use in general and pediatric practice.

DISCUSSION *by Harold K. Faber,, San Francisco; Laurence Taussig, San Francisco; M. L. Cohn, San Francisco; L. J. Schermerhorn, San Francisco; Langley Porter, San Francisco.*

FEW of the recent articles on congenital syphilis are particularly hopeful as regards prognosis, while several have been frankly pessimistic in tone. In a previous paper, published in this journal in August, 1922, I suggested that one reason for this might be a more or less hesitant attitude, on the part of most physicians, toward the employment of intensive therapeutic measures in infancy and childhood, comparable to those commonly used with adults. This hesitancy is based on several rather firmly rooted prejudices in the minds of physicians in general, which might be formulated somewhat as follows: (1) That intravenous injections in infants and children are painful and technically difficult. (2) That large and frequent doses of the organic arsenicals cause serious damage to the liver and other organs in the young. (3) That the co-operation of parents and school teachers, to say nothing of the children themselves, cannot be secured over a sufficiently long period. (4) That late hereditary syphilis is so resistant to treatment that the effort is not worth while.

In my earlier paper I outlined the plan of treatment in use in the Children's Clinic of the Stanford University Medical School, and indicated that excellent clinical and serological results had been obtained in many patients up to that time. In the subsequent two years several improvements have been made in the routine plan, a few variations have been developed to apply to individual cases, and the results as a whole have been so satisfactory that this appears to be an opportune time to present them in a resumé of four years of work.

For therapeutic purposes, the cases are classified as follows: (1) Infants under one year; (2) Children over one year; (3) Interstitial keratitis cases; (4) Wassermann-fast cases; (5) Older children with neurosyphilis. In the first three groups the course begins with a series of eight intravenous injections of neoarsphenamine in concentrated solution, given at the rate of three a week. For the next eight weeks mercurial inunctions are given twice a week for babies, covering most of the body each time, and three times a week for older children, covering about one-third of the body each time. These rubbings last half an hour, and minute instructions are given to the parents. For the interstitial keratitis cases, intravenous injections of novasurol are given twice a week for eight weeks instead of inunctions. During the neoarsphenamine and mercurial courses, a saturated potassium iodide solution is given in milk three times a day with meals, the dose being one drop (one-half minim) per year of age. This is omitted during the first year of life. A two weeks' rest is allowed after the mercurial course, after which a Wassermann test is done, and the whole course repeated. Thus a Wassermann is done every three months, four courses being given in a year.

Sulpharsphenamine or neoarsphenamine may be given intramuscularly twice a week for eight doses to those infants whose veins are inaccessible. The results are quite as satisfactory as from the intravenous method, using the same dosage and concentration; and there seems to be no pain or local irritation, the baby often going to sleep at once.

For Wassermann-fast and neurosyphilitic children, the plan of treatment is radically changed. The child attends the clinic twice a week for eight weeks. On Tuesday he gets an intravenous injection of sulpharsphenamine 0.4-0.8 g., and an intramuscular injection of bichloridol 0.06 g. On Saturday he gets an intravenous injection of silver salvarsan 0.1-0.3 g., and an intramuscular injection of bismudol 0.2 g. This alternation, which was suggested to me by Baketel of New York, has given excellent results. The intramuscular injections are given into the gluteus medius about an inch above the tip of the trochanter, and are very well borne. Potassium iodide is given throughout in full doses. A month's rest follows each course.

Treatment is continued until two successive rest periods have been followed by completely negative Wassermanns, using a very sensitive method. If clinical signs have also cleared up, active treatment is stopped at this point, but mercury protoiodide is given by mouth for two more months to older children. A Wassermann is then taken every six months for three years. No case is dismissed as probably cured unless all these tests have been negative and there have been no clinical relapses. Lumbar puncture is done only when there is a clear indication for it.

I have used three standard brands of neoarsphenamine, and am unable to note any marked difference between them as regards toxicity and therapeutic efficiency. There is some variation in subjective taste and smell, solubility, and content of foreign particles, but these are of minor importance.

Neoarsphenamine and sulpharsphenamine are given in 30 per cent solution, the dosage being based on body weight, as well as on individual arsenical tolerance, as estimated by a somewhat smaller initial

dose. This is about two-thirds of the regular dosage, which is given in the accompanying table:

Weight:	Under 12 lbs.	12-24 lbs.	24-36 lbs.	36-48 lbs.	48-60 lbs.	Over 60 lbs.
Dosage:	0.15 g.	0.3 g.	0.45 g.	0.6 g.	0.75 g.	0.9 g.
Water:	0.5 cc.	1.0 cc.	1.5 cc.	2.0 cc.	2.5 cc.	3.0 cc.

TABLE I. SCHEDULE OF DOSAGE FOR NEOARSPHENAMINE

This dosage may seem excessive, according to adult standards, but it must be remembered that arsenical tolerance in infancy and childhood is relatively high, and that late congenital syphilitics very readily become Wassermann-fast when treatment is prolonged, but inadequate. Immediate or nitritoid crises are very rare, and none have been severe enough to require treatment. Silver salvarsan is given in 5 per cent solution, the full dose being one-third that of neoarsphenamine for the same patient. The initial dose is 0.1 g., and subsequent doses increase by 0.05 g. each time up to the full dose. This gradual increase is very important, and will prevent some unpleasant experiences with this preparation.

The technique is as follows with all these arsenicals: A 5 cc. Luer syringe and a 25 gauge, one-half inch needle are sterilized, and the proper amount of cool, freshly boiled water is drawn up. Freshly distilled water is necessary for silver salvarsan, but tap water is perfectly satisfactory for neoarsphenamine and sulpharsphenamine, which are given in practically equal doses. The tip of the ampule is filed off, and the water forcibly injected through the resulting opening. The ampule is now shaken, with a sterile finger over the hole, until solution is complete, but not longer than this. It is then inverted, the needle inserted, and the solution aspirated into the syringe. It is at once injected into any available vein in the usual manner. The temporal or occipital veins are the best in babies, the head being firmly held and a 2 cc. Luer being used. In older children the veins at the bend of the elbow are often as good as in adults. Between these ages the larger of the two external jugulars is the vein of choice. It is brought into prominence by hyperextending and rotating the head, with a pillow under the shoulders. The needle is inserted during a cry, which distends the vein. Unless blood comes back freely no attempt should be made to inject. In children old enough to reason with, the time spent in gaining the child's full confidence and co-operation, and in overcoming his initial fear of the procedure, will prove to be a very profitable investment. My older children take their injections while sitting in a chair, and there is practically never any outcry or struggle, as the tiny needle is scarcely felt. The unpleasant taste and smell disappear if the child holds his nose and breathes through his mouth during the injection.

Mercury inunctions are given in the usual manner. Emphasis is placed on the necessity of giving the inunctions over a very large area, as the mercury is absorbed only through the pores and hair follicles. Mercurial "olives" are used, the dose being 2 to 4 g., according to age. The potassium iodide solution is dropped slowly into a full glass of milk, which is constantly stirred during this time to insure thorough mixing, and sweetened if necessary.

The intravenous injections of novasurol, which have proved of particular value in interstitial keratitis, are given in ascending dosage. The ampule holds 1.2 cc. The first dose is 0.6 cc., the second 0.9 cc., and all subsequent doses 1.2 cc. Renal irritation is very unusual, and never lasts more than a week after stopping the mercurial. In interstitial keratitis, the preliminary neoarsphenamine course seems to prevent involvement of the second eye in unilateral cases, while the novasurol clears up the acute symptoms and ultimately the opacities. Old cases, of course, respond slowly, but recent cases attain normal vision in a few months.

Novasurol is injected directly, without dilution, using the same 2 cc. Luer and small needle as are employed for neoarsphenamine. It is absolutely non-irritating to the vein. As stated above, two injections a week are given for eight weeks, following each arsenical course.

Untoward effects from the routine plan of treatment have been very infrequent. There have been some patients who could not tolerate iodides, while a few developed a mild dermatitis from neoarsphenamine. These cases all cleared up rapidly under the sodium thiosulphate treatment recommended by McBride and Dennie. Our only fatality traceable to the treatment occurred from intercurrent pneumonia developing in a case of severe toxic jaundice. The patient, a hopeless juvenile paretic, was given a very intensive course of the mixture of neoarsphenamine and bichloride advised by Linser of Tübingen. (We tried this method for a while, but abandoned it as both inefficient and dangerous.) With these few exceptions, I cannot recall one child who seems to have been damaged by the treatment, which seems rather to have a tonic effect.

The clinical and serological results have been very gratifying. As shown in the table, all infants under one year of age have become persistently negative after one or two courses. Of the adequately treated older children, 65 per cent have become and remained negative, 8 per cent became negative, but relapsed, and 27 per cent are Wassermann-fast. The observation period in the negative cases has lasted from a few months to four years without treatment. No case has relapsed after being constantly negative for a year. Of twelve well-treated cases of interstitial keratitis, nine now have normal vision, and three (all old cases) are improving. Of four unilateral cases, the second eye became involved in only one. This boy received no neo. before his first mercurial course. Two small infants died of intercurrent disease, one of broncho-pneumonia, and one of dysentery.

TABLE II

Serological Results in Infants Under One Year		
Total infants treated	15	
Died of intercurrent disease	2	
Negative after one course	12	
Negative after two courses	1	
Serological relapses	0	

TABLE III

Serological Results in Children Over One Year		
Total children treated	87	
Disappeared from observation	17	
Recently began treatment	15	
Died	1	
Adequately treated cases	54	
Became and remained negative	35	65%

Became negative but relapsed	4	8%
Wassermann-fast to date	15	27%

TABLE IV

Results in Interstitial Keratitis

Total cases treated	13
Disappeared from observation	1
Normal vision restored	9
Improving (old opacities)	3
Second eye involved during treatment	1

Particularly notable has been the clinical improvement in these cases. Bone lesions and paralyses have disappeared, nutrition and weight and color have improved remarkably, and the whole appearance of the patients has changed for the better. One girl gained thirty pounds during her third year of treatment, having gained comparatively little before this. The teachers report better scholarship and conduct under treatment, and all who have seen the results feel that the work has been of great value.

SUMMARY AND CONCLUSIONS

A safe and efficient plan of treatment for congenital syphilis, with suitable variations for special types, is presented.

The methods described are easy to carry out, require very little apparatus or technical skill, and cause practically no discomfort to the patient.

The principle involved is a series of vigorous attacks on the spirochete with the various available remedies, as the best means of avoiding the Wassermann-fast state.

The evolution of the method during 1920-1922, and its extensive use since then, both in private practice and in several clinics, has been followed by eminently satisfactory clinical and serological results. It is therefore recommended for routine use in general and pediatric practice.

Fitzhugh Building.

DISCUSSION

HAROLD K. FABER, M. D. (Stanford University Medical School, San Francisco)—Up to the last few years congenital syphilis was rightly regarded as one of the more intractable forms of the infection, and prognosis had to be given in the most guarded terms. Such results as Dr. Schussler has shown justify a much more hopeful outlook and represent a real triumph in therapy. They have been obtained not only by systematization and persistence, but by a radical increase in dosage, the initiation of which required faith and courage in the face of adverse criticism. I have watched from the first, with interest and approval, Dr. Schussler's well-planned and vigorous method of attack against a disease which is both widespread and deeply rooted at the earliest moment when measures can be directed against it and have been deeply gratified by the success he has obtained, so amply demonstrated in the present paper. It should be emphasized that the method is simple enough to be used by any physician with some skill in intravenous technique with children, though Dr. Schussler's unusual proficiency has been an important factor in the success he has obtained.

LAURENCE TAUSSIG, M. D. (380 Post Street, San Francisco)—It has impressed itself upon us for some time that conscientious, persistent antiluetic therapy could cure a certain proportion of children with hereditary syphilis. As in other forms of late lues, the most important therapeutic agent is mercury. The form in which it is given is of relatively little importance, though I should place properly administered mercury rubs first, insoluble mercury injections, administered intramuscularly, second, and mercury by mouth last. I have had no experience with intravenous mercury, but can see no advantage in its use. I do not think that it matters much whether we give sulpharsphenamine intramuscularly or neoarsphenamine intravenously, providing a number of doses are given at regular intervals. Our routine course at Children's Hospital recently has been to give 0.1 to 0.3 of sulpharsphenamine at weekly intervals for six or eight doses, and then bichloridol gr. ¼ to gr. 1 at weekly intervals for twelve to eighteen doses. Our series is too small and too recent to compare the results with those reports in this paper, though the results appear to be good so far. It seems to me that the important point that Schussler has brought to our attention and emphasized is, that the conscientious treatment of congenital syphilis is well worth undertaking, and that the earlier we start and the more faithful we and our patients are the better our chance of benefiting the members of this class of unfortunates. I am not convinced that Schussler's rather radical neoarsphenamine dosage is necessary, even though it has proven safe.

M. L. COHN, M. D. (240 Stockton Street, San Francisco)—I have keenly enjoyed the paper of Dr. Schussler and believe it will be of untold assistance to many practitioners who are prone toward pessimism in the prognosis of congenital syphilis. It will also be of extreme value to those men who have no systematic routine in the treatment of this condition, and to those who are skeptical regarding the safety of such intensive treatment.

For the past few years I have treated a large number of congenital syphilitic children at the Children's Clinic, University of California Hospital. My routine has not been so intensive as that advocated by Dr. Schussler, and perhaps the time element has been prolonged, but the results are ultimately quite comparable.

Each practitioner has his individual conception of the treatment of congenital syphilis, most procedures based upon the use of the two drugs—mercury and arsenic—and each method possessing its respective merits.

The most valuable factor in treating congenital syphilis, and the one least considered, is the co-operation of parent and patient. When this condition has been fulfilled it makes little difference which of the arsenicals and mercurial preparations are used, providing adequate dosage is administered over a sufficiently long period of time.

L. J. SCHERMERHORN, M. D. (516 Sutter Street, San Francisco)—During the past five years I have had about seventy-five cases of congenital syphilis under observation and treatment. I am firmly convinced that, to get satisfactory results from treatment, it is necessary to use large doses of either salvarsan, neosalvarsan, silver salvarsan, or neutral salvarsan in combination with mercury and the iodides, and in certain cases bismuth.

Dr. Schussler's plan of treatment is an excellent one, and one that can be followed with comparative safety. However, one must be on the lookout for complications and not take unnecessary chances in pushing the drugs beyond the patient's tolerance.

More negative Wassermanns are obtained if, after the first course of neosalvarsan is given, salvarsan or silver salvarsan is used for the second course, and the third course may be a combination of neosalvarsan and any one of the other salvarsans. Mercury is as necessary as arsenic. Mercurial inunctions are the method of choice if the parents will co-operate with the doctor; if not, intramuscular injections of insoluble mercury are to be preferred. Schussler's results are the result of conscientious, persistent treatment, and his methods are a step forward in the treatment of congenital syphilis.

LANGLEY PORTER, M. D. (380 Post Street, San Francisco)—It is refreshing to come upon a paper written as this one of Dr. Schussler's is, from the standpoint of a clinician amply experienced in the subject matter of his essay. Nothing can be more valuable than this contribution, and its value lies no less in the demonstration of the worth of well-organized university clinics devoted to the special study of single diseases (clinics where adequate material is bound to accumulate) than in the painstaking report of success the clinician's long labor won in this difficult field.

Thanks to the activities of obstetricians and syphilographers who deal with adults, patients with congenital syphilis are much fewer than formerly, so that to gather and bring under treatment so many cases of congenital syphilis is an achievement in itself hardly less to be applauded than the success that has attended the persistence of Dr. Schussler in his line of therapeusis.

The report marks the writer's familiarity with the most

recent works of other clinicians, and it is of importance that he is able to confirm the observation that bismuth is effective in overcoming the factors that produce persistence of the Wassermann reaction in resistant cases.

This contribution will be of great practical value to the profession and a great aid to the pitiable victims of congenital lues because the detailed descriptions of methods and modes make the treatment, as practiced by the writer, available to any one in the profession. It is a real contribution, an honor to the writer and to the medical school he so ably represents.

DR. SCHUSSLER (closing)—I am glad that my paper has brought out such an interesting discussion, which strongly emphasizes the curability of the disease under intensive and persistent treatment. The large doses and short intervals which I now use have been reached by a gradual evolutionary process, and I feel very strongly that they are necessary to secure the best results. Practically all my Wassermann-fast patients were started on relatively mild and inefficient treatment several years ago, and their spirochetes are now resistant to both arsenic and mercury. By way of contrast, out of ten strongly positive older children who were given an intensive first course about six months ago, nine were completely negative at the end of the rest period, while the tenth was still weakly positive. As the question of inunctions versus injections came up, I may add that I have practically given up inunctions since the paper was written. I now give infants a weekly intramuscular injection of bichloridol 0.01-0.015 g. for eight weeks after each neoarsphenamine course. Older children get ten weekly intramuscular injections of a mixture of bichloridol 0.06-0.12 g. and bismudol 0.2 g. in the same syringe. This is practically painless, only the first injection causing any noticeable discomfort, and no toxic effects have been noted. The eight neoarsphenamine injections are given during the first three weeks of the mercury-bismuth course, with iodide by mouth throughout. The rest period is one month in all patients, a tonic being given if necessary. I find the gluteus medius more satisfactory in some cases, and the gluteus maximus in others. I have found intravenous injections of novasurol very valuable in rapidly controlling severe ocular lesions, such as interstitial keratitis. Perhaps bichloridol and bismudol in full doses will prove equally efficient. Sulpharsphenamine has proved superior to neoarsphenamine in these eye cases.

Let me emphasize again that the general practitioner can now cure at least 80 per cent of his congenital syphilitic patients without difficulty, pain, or danger; and more than one year of treatment is rarely necessary. I can therefore see no excuse, even in isolated communities, for allowing these unfortunates to go untreated.

HEALTH OFFICERS APPOINTED

According to the California State Board of Health Weekly Bulletin, the following health officers have been appointed:

Mr. M. B. Ordway has been appointed health officer of Pacific Grove to succeed *Mr.* Frank B. Wilcoxson. *Mr.* Ordway is not recorded as being licensed to practice medicine in California.

Mr. M. G. Frost has been appointed health officer of Placerville to succeed *Mr.* Roy McCall. Neither *Mr.* Frost nor *Mr.* McCall are recorded as being licensed to practice medicine in California.

Dr. J. T. Christian of Galt has been appointed health officer of Sacramento County to succeed Dr. George H. Sanderson of Folsom. Dr. Christian is licensed to practice medicine and surgery in California, but is not a member of the California Medical Association at this time. Dr. Sanderson is a member.

Dr. E. W. Westphal has been appointed health officer of the newly incorporated city of Atherton, San Mateo County, postoffice Menlo Park. Dr. Westphal is not reported as licensed to practice medicine and surgery in California. He is not a member of the California Medical Association.

Most of the shadows of this life are caused by standing in our own sunshine.—Emerson.

SECONDARY HYPERTROPHIC OSTEOARTHROPATHY FOLLOWING METASTATIC SARCOMA OF THE LUNG

REPORT OF A CASE

By LLOYD BRYAN, M. D., *San Francisco*

The majority of authors are agreed that this condition is caused by a long-continued hyperemia secondary to an interthoracic condition in addition to a toxemia secondary to the primary disease.

The course of the condition is extremely variable. It may subside and entirely disappear with healing of the primary lesion, or it may progress independently of the original disease with the bone picture at the end not unlike that of osteitis deformans.

DISCUSSION *by Leo Eloesser, San Francisco, and W. R. P. Clark, San Francisco.*

SECONDARY hypertrophic osteoarthropathy has been recognized as a distinct clinical entity since the original papers of Bamberger (1889 and 1891) and of Marie (1890) and its relation to the simple clubbing of the fingers definitely established by the excellent work of Locke in 1915.

The majority of authors are agreed that this condition is caused by a long-continued hyperemia secondary to an interthoracic condition, in addition to a toxemia secondary to the primary disease. While, as a rule, the primary lesion is a chronic one, usually ~~tuberculosis~~, bronchiectasis, chronic lung abscess, chronic disease of the circulatory or alimentary tract, secondary hypertrophic osteoarthropathy may occur in a rather acute condition.

Hyman and Herrick report a case in a child of 28 months without any primary lesion being demonstrable. I have observed it in a boy of twelve with an acute lung abscess, which was treated surgically and completely cured in three months. In this patient, at the end of a year all signs of the secondary bone changes had disappeared.

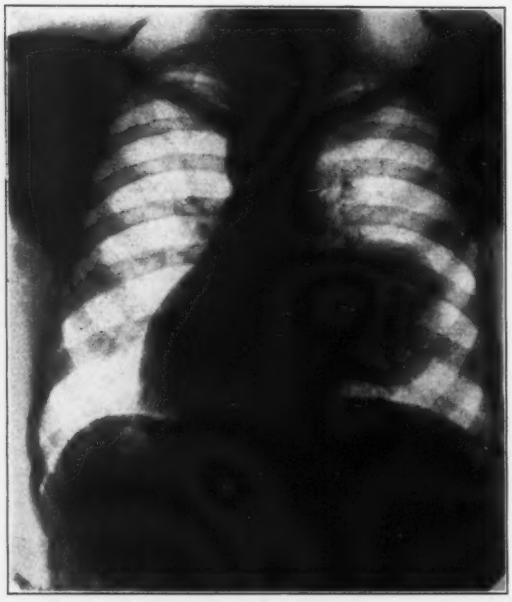
The course of the condition is extremely variable. It may subside and entirely disappear with healing of the primary lesion, or it may progress independently of the original disease, with the bone picture at the end not unlike that of osteitis deformans. There may at times be periods of regression and progression corresponding to the course of the primary lesion. Clinically, the condition is characterized by soft tissue swelling, redness, tenderness and pain in the region of the joints. Roentgenologically, the only means by which the diagnosis is certain, the first findings are bur-like irregularity of the distal phalanges, and later a laminated ossifying periostitis involving first the fifth metatarsals and metacarpals, then the remaining metatarsals and metacarpals, and later the long bones, and finally all the bones of the skeleton. The diaphyses are primarily involved, but the epiphyses do not escape. The joints show first swelling and erosion of the cartilages, and at times complete destruction with ankylosis of the joint.

Saundby, Hall, Alexander, Cagnetto, Hasbrouch, Oliver and I have each reported one case of hypertrophic osteoarthropathy with sarcoma of the lung, and this case is reported to again emphasize that a fairly acute primary lesion may be responsible.

A. C., male; 25; Italian; carpenter—Entered the San Francisco Hospital August 18, 1922. Complaint: Pain and swelling just above right knee for two and one-half

months. Injured knee June 2, 1922, while climbing a ladder; almost constant pain since then. On June 13, 1922, swelling was 2 cm. in size. F. H.: Unimportant. P. H.: Patient single. Denies venereal disease. Patient has always been well. P. E.: Slight pyorrhea, moderate enlarged tonsils. Two small glands in anterior cervical triangle. Marked enlargement of the right inguinal glands. At inner aspect of lower end of right femur there is marked swelling about twice the size of a baseball. X-ray: Periosteal sarcoma. Patient refused amputation, was given deep x-ray therapy. Urine and blood normal. Re-entrance, August 7, 1923. Blood pressure normal. Wassermann, negative. Tumor ulcerated, horribly foul, size of a large cantaloupe, Welch bacillus contamination. Amputation, August 11, 1923, by Dr. Leo Eloesser, right leg, middle of the thigh. Post-operative: Patient made a good recovery, discharged October 3, 1923.

Re-entrance, October 29, 1923. P. I. about one and one-half months after operation, stiffness began to develop in all his joints, with swelling of the joints of his foot and hands; there was little pain. P. E.: Swelling of the joints, clubbing of the fingers. Patient cannot tightly clench his hand. Other findings practically the same as before. There is some stiffness in both elbows. Complaint: Increasing weakness. X-ray of chest on November 1, 1923, showed large, rounded, smooth tumor mass in lower one-half of right lung and a few smaller nodules elsewhere in the lung. Patient complains of difficulty of swallowing. X-ray examination of head is negative; apparently, no metastasis in hypophysis. X-ray of joints shows marked osteoarthropy. Died February 23, 1924.



Autopsy by Dr. W. Ophuls — Strongly built, well-nourished young man about 25 years of age. The right leg amputated about one-third of femur, well healed. Stump of leg is distinctly swollen, rather hard brawny resistance. Edematous swelling posterior part of scrotum and thigh on right. Left leg very much swollen, showing similar solid edema and marked enlargement of all

toes, especially distal ends of them. Moderate edematous swelling of both forearms, especially left, and very marked enlargement of all fingers and marked clubbing at ends. Nose and ears fairly large. Lips slightly prominent, and chin is small. There is little hair on upper lip, chin, and sides of both cheeks. Pupils are widely dilated.

Skull rather small and round. Skull cap normal; shows some deep depression from Pacchionian granulations in summit. Pia mater on both sides show marked congestion and edema. Sella turcica and hypophysis normal. Large venous sinuses base of brain normal. Large arteries base of brain normal. Slight accumulation of slightly bloody fluid in lateral ventricles and few soft, rather large clots. Brain section: through all parts nothing abnormal.

Abdomen moderately distended; marked atrophy of subcutaneous fat. Muscles also show marked atrophy. Liver projects five fingers below costal margin, in fifth mammillary line. Left lobe about same distance below zyphoid. Lower border stomach at umbilicus. Transverse colon just below. About 50 cc. of clear fluid in the recto-vesical pouch. Diaphragm at sixth rib on both sides.

Chest is very large and strongly arched. No calcification of cartilages of ribs. In anterior mediastinum attached to posterior surface sternum is large, white tumor nodule 7 x 5 cm.

In pericardium 300 cc. clear, light yellow fluid. In left pleura 100 cc. clear, light yellow fluid. The right pleura completely obliterated by very strong fibrous adhesions, in lower part of which is very large mass of tumors about size of two fists which is firmly attached to diaphragm to inside ribs and replaces large part right lower lobe. Bone is not deeply invaded anywhere. Small

nodule just in front of body of fifth dorsal vertebra; another nodule size walnut attached to third rib near spinal column. Oesophagus somewhat twisted at lower end, apparently by pull of adjoining tumor nodule, otherwise normal. Trachea and larynx contain some clear foamy mucus. Marked involvement lymph glands at root of lung. Left main bronchus invaded. Tumor has gone through wall and projects in shape of small polypus on inner surface. Large nodule in anterior mediastinum is attached to pericardium, but has not invaded it. Heart valves are normal; muscle, thin, dark brown, and flabby.

No scar at left apex. Left pleura studded with large tumor nodules, largest about 5 cm. in diameter. Left lung well filled with air, except for large area of collapse of left base. Some small nodules in lung tissue. Large nodule in hilus of lung about 8 cm. in diameter. Aorta small, otherwise normal. Thyroid gland small, otherwise normal. Right lung: no scar at right apex. Numerous large nodules in right lung. The largest one measures 12 cm. in diameter, and is in the right lower lobe. Spleen is large, 13 x 9½ x 4; cut surface shows very marked passive congestion. Left adrenal is small, otherwise normal. Left kidney—capsule strips easily—measures 12 x 5½ x 3½. Kidney shows a marked passive congestion. Right adrenal and right kidney same as left. Marked edema of pelvic connective tissue. Bladder contains some clear urine; shows a marked passive congestion and some edema. Prostate is normal. Rectum is normal. Duodenum and contents normal. Bile-duct is patent. Stomach contains some dark brown mucus; mucous membrane shows exceptionally heavy rugae. Pancreas small, otherwise normal. Gall-bladder and contents normal. Liver large, 26½ x 21½ x 7½ cm. Cut surface: centers are dark and the peripheral parts light in color. Omentum is atrophied. Mesenteric lymph nodes normal. Retroperitoneal, iliac lymph nodes normal. Femoral lymph nodes moderately enlarged, congested, and edematous. Small intestine is normal. Large intestine shows marked passive congestion and edema. Appendix is normal.

Anatomical Diagnosis — 1. Osteo-sarcoma periosteal femur. 2. Sarcoma metastic of lung. 3. Edema lymphostatic of all extremities. 4. Osteo-arthropathy, general. 5. Operation, amputation thigh. 6. Pleurisy, chronic adhesive.

Histological Examination — Pancreas: Normal, normal arteries. Hypophysis: Normal. Kidney: Very much congested, normal arteries, few small scars in cortex. Prostate: Normal. Liver: Moderate fatty infiltration in periphery of lobules, normal arteries. Spleen: Very marked congestion of veinous capillaries, otherwise normal, normal arteries. Tumor: Consists of cellular fibrous tissue in which there is much osteoid tissue which is partly calcified; in places there are large giant cells, large areas of necrosis. Lung: Contains tumor nodule of similar structure. Colon: Very much congested, otherwise normal. Small Intestine: Normal.

I am indebted to Dr. Leo Eloesser for the privilege of reporting this case.

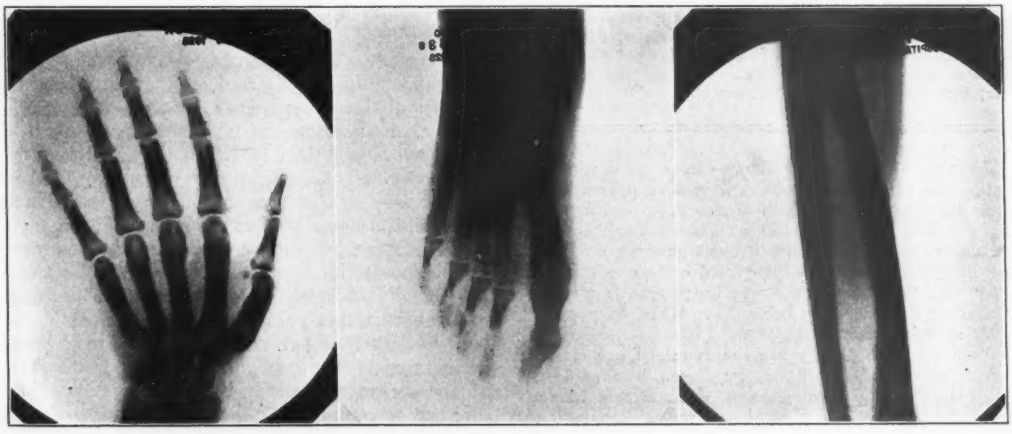
135 Stockton Street.

DISCUSSION

LEO ELOESSER, M. D. (135 Stockton Street, San Francisco) — The cause of secondary hypertrophic osteoarthropathy and its allied manifestation, clubbed fingers, is unknown. Neither venous stasis nor suppurative processes alone suffice to account for their origin. Most cases follow pulmonary suppuration, either tubercular or non-tubercular. Doctor Bryan's report is of peculiar interest because the patient was neither cyanotic nor did he have a suppurating focus at the time when his periostitic deposits first made their appearance.

Most secondary osteoarthropathies show exacerbations and remissions; thus patients with discharging empyemas not uncommonly complain of pain and swelling of their bones and joints whenever their chests drain insufficiently: when abscesses break out and drain freely pain and swelling recede. This would incline one to ascribe the origin of the arthropathy to an infectious element.

Typical unilateral club-fingers have been described, however, following subclavian aneurysms; in these an infectious element (unless the underlying lues be so considered) is absent. In Bryan's case, too, no foci of infection were apparent. So that the infectious theory has its flaws. Venous stasis alone will not suffice to produce an osteo-arthropathy. Either stasis or infection or both combined may be found in most case reports. Bryan's showed neither. There was stasis, it is true, but a strangely scat-



tered and localized stasis very difficult to explain. There was generalized lymphostatic edema of all the four limbs; the colon was edematous, but not the small gut; nor was there more than a very little free fluid in the belly, and very little, too, in the pleurae. This peculiar localization cannot be accounted for by a block of the great veins at the heart or in the mediastinum. So that the theory of a venous stasis is also insufficient to explain every case.

The cause of this patient's lymphatic block remains a puzzle, but, whatever the cause may be, lymphatic obstruction may have something to do with the production of the periosteal deposits and the clubbing of the fingers and toes.

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The most marked and noticeable effects of spinal anesthesia is the rapid drop in blood pressure and a change in type of respiration due to anemia of the brain and the reflex started in the solar plexus. The pulse beat becomes feeble and slower, and almost imperceptible at times. These effects are terrifying, but the real adjustment of both respiration and circulation is almost as rapid as their onset. The patient is apt to have nausea and vomiting at this time, which is not prolonged for any great length of time.

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ward effects occur during the first years of use and before the operator has acquired his technique.

In 1912, following an epidemic of cerebrospinal meningitis, I published a series of 800 uncomplicated lumbar punctures, and I found at that time that the use of serum by the incompetent caused about the same complications as Dr. Negley has noted.

We have all been trained with the idea that little skill is required to give an anesthetic, so such duties fall to the junior intern or the nurse. When such an assistant is given a Quincke needle and a book of instructions, someone's series of a hundred cases or less is going to show complications ranging from paralysis to exitus. Since the reports of complications in the literature generally come from such small series of cases, the question naturally arises whether the method is at fault or personal incompetence should be blamed. Sacral anesthesia has proven very satisfactory at the Mayo Clinic, because Labat was brought from Pauchet's Clinic in Paris to teach its use. Intra- and extradural nerve-blocking is a delicate procedure, requiring more skill than the suprapubic removal of a prostate, and the anesthetist should not only be a surgeon, but have an intimate and an exact knowledge of physiology and pharmacology.

Any operation whose technique cannot be quickly mastered by the average surgeon should not be used by any but trained specialists. Spinal anesthesia administered by experts to properly selected cases is efficient and harmless, but in the hands of amateurs is still pregnant with dangerous possibilities, hence I do not feel that its general use should as yet be encouraged.

ARTHUR B. CECIL, M. D. (Pacific Mutual Building, Los Angeles)—It gives me great pleasure to discuss Dr. Negley's article on spinal anesthesia in urology. He has made a contribution which is notable not only for giving exact methods of technique, but for his unbiased discussion of a subject with which he is thoroughly familiar. There are undoubtedly cases in urology where general anesthesia is to be avoided, and I take it that Dr. Negley would more or less limit the use of spinal anesthesia to these instances.

Personally, I do not believe that as a routine spinal anesthesia will ever replace general anesthesia. I believe that, all in all, it is more dangerous; that one would have more accidents than would be the case where general anesthesia was properly administered. Unconsciousness of itself should never be a deciding factor. I am not at all sure that the state of unconsciousness of one's patient does not many times result in a better surgical procedure than one could carry out were the patient conscious.

So far as I have been able to determine, unless there were definite indications for local or spinal anesthesia, I would much prefer to have the urological case under a general anesthetic properly administered; and yet in making this choice I realize that very few people have the ability to carry out spinal anesthesia with the degree of success of which Dr. Negley is capable.

GRANVILLE MACGOWAN, M. D. (Brack Shops Building, Los Angeles)—In examining the discussions of Dr. Negley's paper by Drs. Rigdon, Wesson, and Cecil, I am reminded of the Asiatic proverb that "Most of the evils we fear never happen." All the dangers which are conjured up by suspicious and timid souls, as applying to spinal anesthesia were thought of by me and resulted in my most bitter opposition to this method of producing analgesia during the first year after the method had been proposed and its possibility demonstrated. An accidental circumstance led me to overcome my prejudice and use it in a case where any method of anesthesia involved more danger than the operation itself. The agent at this time was cocaine, and it was with much fear that I used it. The results were so satisfactory and so astounding to me that, with great caution, I occasionally used spinal anesthesia for perhaps a year. Although no fatalities occurred in my practice, there were sufficient that arose throughout the world to make its dangers seem very real. Then tropococaine with a toxicity enormously less than cocaine was discovered and introduced for use in spinal anesthesia. I became one of its users, and it has been my favorite method of obtaining anesthesia in my cases of genito-urinary surgery in which the circulatory or respiratory condition was unfavorable for the use of a general anesthetic, or when there existed a morbid fear of being rendered unconscious, or when it was desirable that the person on whom the operation was being performed should have the muscles of the lower abdomen and of the perineum entirely relaxed during the period of operation. I have never had any fatality, nor any serious trouble arising from this anesthetic. During the same period of time, where from reasons of prejudice, or as during the war when tropo-cocaine was for a time unobtainable, a general anesthesia—gas oxygen or ether—had to be administered, I have often experienced very real difficulty and much trouble and interruption of the operation to restore or revive the patient.

I do not believe that routine spinal anesthesia will ever replace general anesthesia, not because it is more dangerous, but because it seems to require a considerable amount of mechanical skill and judgment that the average surgeon does not possess and will not learn.

By using a small and delicate needle for the spinal puncture, there is, in my opinion, no chance for any mechanical injury to the cord if the surgeon does not possess the idea that the only way of obtaining access to the subarachnoid space is by means of rape of the spinal column. In performing lumbar puncture, either for diagnosis or for anesthesia, I teach the humane method of anesthetizing the skin and the deeper tissues down to the dura with a half per cent solution of novocaine before inserting the spinal needle.

The headache which one occasionally sees follow spinal anesthesia is not due to the drug, because it very frequently follows a simple spinal puncture where the individual is allowed to be up and about too soon. The fact that the nature of the operations upon the uro-genital organs in which I use spinal anesthesia requires a long sojourn in bed is usually sufficient prophylaxis against these headaches. It is never necessary to have the patient out of bed early. The trail of stinking urine marking their progress is, to my mind, an evidence of cruelty and indifference to comfort upon the part of the operator.

There is another point upon which I wish to dwell, which is, that the relaxation obtained by spinal anesthesia avoids the necessity for the extremely rapid operative procedures which are regarded by so many as absolutely necessary in genito-urinary surgical work, a rather nefarious belief, founded entirely upon the evil effects which are known to result from a prolonged anesthetic. Under a spinal anesthetic, plenty of time can be taken for deliberative movements and completion of the operation, which should be finished when once commenced.

Individually, I have been very glad that such an agent existed, not only on account of the many cases of bad risks which I have been able to conduct to a favorable conclusion, but also on my own account, because for many years I have been obliged to operate with one arm, the subject of a traumatic neuritis which never has been during the whole period without pain, and the muscular relaxation of the patient has saved me from struggling with him, as so commonly happens in supra-pubic manipulations inside of the bladder and in perineal operations where the patient does not lie quiet under a general anesthesia conducted by timorous or unskillful anaesthetists.

DOCTOR NEGLEY (closing)—Doctor MacGowan, in his masterful discussion of this paper, has left very little for me to say, as he has answered both Dr. Rigdon and Dr. Cecil in their attitude toward this method of anesthesia.

Dr. Wesson's concluding remarks regarding the use of spinal anesthesia cover my attitude exactly, except that I think surgeons in general, and urologists in particular, should learn the technique absolutely and use it more frequently.

Mails Closed to "Cures"—The Postoffice Department has issued *"fraud orders"* against two alleged tuberculosis cures recently, and they are getting quite busy with certain other classes of "fakirs" who use the mails to exploit the sick. One of the tuberculosis "cures" fooled a lot of newspapers by sending out their "news" stories as quotations from Dr. X, quoted as "a prominent doctor of ——." The doctor referred to proved to be an osteopath. "Doctor —— of California," said by the newspaper stories to be a *"national authority"* on tuberculosis, was given front-page prominence for another "cure" for tuberculosis. Investigation showed that no such doctor lived in California.

A STUDY OF TWENTY-ONE CONSECUTIVE AMBULATORY BACK INJURIES, WITH SPECIAL REFERENCE TO FRACTURES OF THE SPINE.

By H. W. SPIERS, *Los Angeles*

The frequency of bone injury to the spine.
The infrequency of malingering.
The necessity of careful clinical study of the injured back.
The value of stereoscopic and lateral x-ray examination of the suspected area, and above it.

DISCUSSION *by E. W. Cleary, San Francisco; D. I. Aller, Fresno; C. E. Early, Los Angeles.*

FROM May 1, 1922, to October 1, 1923, I examined fifty-five back injuries. All were ambulatory patients. A large majority were men. All but a few had been seen and studied by from one to several surgeons. In the main, their diagnoses were not very definite. Of the fifty-five patients, twenty-one were found to have a definite spine injury, as shown by the x-ray examination. It is these twenty-one with bony injury that I wish to discuss.

About half of them were referred by physicians; the remainder were referred by the Industrial Accident Commission. Thus, the man with the injured back is frequently seen by the orthopedic surgeon as referee. Some of these individuals are keen type of men, but the most of them are of the class among whom one would hardly expect a clever malingerer. Of the series examined, none was proven a definite malingerer. That a good many exaggerated their symptoms I am certain, but all had some basis for their complaint. A number showed no signs definite enough to warrant a diagnosis of serious injury. In others, whose previous diagnosis had been "neurosis" or "railroad spine," I was able to demonstrate definite bone injury.

A careful history, an orderly examination, including intelligent x-ray study, goes a long way toward getting to the root of the trouble.

In the history, the type and manner of the injury should be given consideration. The distance of a fall may not be of as much importance as of the way in which the individual landed or of the object upon which he landed. I found it fairly common to find a crush fracture of a body of the lower dorsal or upper lumbar spine when the fall was such as to cause the man to land on his upper back and shoulders. This is reasonable when one considers that a bow breaks most frequently near its middle, not at its end. Fractures of muscular violence are not unusual. The individual in the bent-forward position lifting a heavy object, who slips or is suddenly forced to carry more than his muscles are mechanically able, frequently fractures parts of his spine. Fractures of the transverse processes are frequently from muscular violence. Usually there has been a rotary violence also. The articulating facets occasionally give way under similar violence, in my opinion.

An orderly examination includes an inspection of the entire back, with the patient entirely stripped. The position and attitude of the head and shoulders should be noted. The normal curves of the spine and their variations if any, should be checked up. The weight line of the body, both lateral and anteroposterior, is of importance. A study of the function of each of the segments of the spine should be made. It is to be remembered that the greater part of the motion of the spine takes place in the lumbar region. Here forward, lateral and backward movements, as well as rotations, have the widest range. Limitation of movement in this region is much more easily demonstrated than in the upper and middorsal segments, but even there careful observation will demonstrate it if present. It is my custom to palpitate the spinous processes and the area lateral to them throughout the entire spine. Deep pressure over the injured vertebra is liable to produce marked subjective symptoms. If there is an injury to the transverse process, as one would expect, active movements which involve the muscle groups attached will produce symptoms, while passive movements will usually be painless. An injury to the articulating facet localizes itself if a study of the signs, symptoms, and function of the segment involved is made. I feel that injury to these facets is more frequent than is generally recognized. Rotary, muscular or direct violence, if the leverage is right, will frequently result in fracture. Fractures of the body of the vertebrae may give symptoms similar to any of the other types of fractures. I think it is only just to say that there are crushing injuries to the bodies of the vertebrae which cannot be demonstrated early, but which on later examination show the definite wedge shape that is so characteristic. The probable explanation is that the body was damaged and its structural strength impaired, giving way gradually under the superimposed weight of the trunk.

Stereoscopic x-rays are of much more value in demonstrating the lesser bony injuries to the spine than the flat plates. Lateral views are essential in the study of the spine, and we are only just beginning to appreciate the value of these. All examinations were made with the aid of the Bucky diaphragm. Certain films which had previously been taken of these patients were seen. Some were simply poor plates, which, of course, eliminate good diagnosis. Others were not well localized, the region of the injury had not been included, and many where the injuries were included were flat plates in which the injury of the lesser processes could not be demonstrated. A good lateral view of the spine until recently has been a difficult thing to secure. Many of them are altogether inadequate. It is my experience that one is likely to localize the injury lower than it actually is. One must keep in mind that referred symptoms radiate downward in all spine injuries. In other words, have your x-ray study include several vertebrae higher than the supposed injury, as indicated by the findings. A mistake to avoid is trying to cover too large an area in the individual film. After one's study has been carefully made, the region of the injury can usually be indicated to the radiographer and a clearer knowledge of the bony structure thereby obtained.

Some of the outstanding clinical facts noted in

this series were: the importance of muscle spasm, the value of studying with the range of motion of all segments of the spine, and the comparative rarity of definite evidences of nerve lesions. It is my opinion that definite muscle spasm means definite pathology. An injury to the spine almost invariably limits the motion of the segments to some degree. The point of maximum subjective symptoms during palpation is usually taken as the clue to the segment that should be most thoroughly studied. It is not difficult to make a diagnosis of a fractured spine if one has evidences of definite cord or root lesion, or a good lateral view and sees a wedge-shaped vertebra. It is more difficult, however, to account for some of these injured spines that have the lesser bony processes only involved. These usually have at most only referred pain as evidences of nerve disturbance and can be demonstrated only by the most clear-cut films and painstaking study.

Regarding malingerers: A study of the table of cases shows that, out of twenty-one, six were definitely said to be malingerers. Of the remaining fifteen, practically all were thought to be exaggerating their symptoms. I am definitely of the opinion that we, as surgeons, have made many grevious mistakes in our diagnosis of the neurotic spine. Since x-rays show that the lesser processes of the spine are frequently damaged and that compression fractures are not at all infrequent, due even to muscular violence, one must admit that this proposition has a great deal of basis of fact. It does not seem reasonable to me that an individual whose earning capacity is far greater while at work than when laying off, receiving insurance or individual compensations, might, for some imaginary or minor disability, greatly exaggerate his symptoms.

The points I wish to bring out are:

1. The frequency of bony injury to the spine.
2. The infrequency of malingering.
3. The necessity of careful clinical study of the injured back.
4. The value of stereoscopic and lateral x-ray examination of the suspected area and above it.

No. 1—M. V., 28 years old. Injured April 6, 1921. He was injured by lifting a weight of about fifty pounds in an awkward stooped position. Examined twelve months later. Previous diagnosis, sprain of the low back. He complained of low back pain, which radiates down the left leg. The pain is relieved by rest, and increased by exertion. Examination showed limitation of movement and muscle spasm in the low back. X-ray findings show a rotary luxation of the fifth lumbar vertebra on the sacrum, and a fracture of the right sacral articulating facet; also impingement of the left transverse process of the fifth lumbar vertebra on the iliac crest.

No. 2—A. R. P., 54 years old. Injured August 10, 1921, by falling from a building a distance of fifteen feet, landing on his upper back. Examined nine months later. Previous diagnosis, neurosis. He complained of constant pain in the low back, which radiated downward to the region of the left knee; also pain in the lower abdomen. There was evident limitation of movement in all directions in the region of the upper lumbar and lower dorsal vertebrae and marked muscle spasm. X-ray examination showed a compression fracture of the bodies of the second, third, and fourth lumbar vertebrae with bony overgrowths.

No. 3—J. C., 69 years old. Injured December 7, 1921, by being struck by an electric trolley car, suffering a broken jaw, broken ribs, and injured back. Examined ten months later. Previous diagnosis, as regards the back, was neurosis. He complained of backache on standing and walking. Examination showed marked muscle spasm throughout the entire low dorsal and lumbar spine, with marked limitation of flexions in the lumbar regions. X-ray findings showed a fracture of the transverse processes of the second and third lumbar vertebrae.

No. 4—C. O., 38 years old. Injured September 25, 1922, by being crushed by a mass of falling dirt. Examined one month later. Previous diagnosis, contusion and sprain of the back. He complained of pains in the left hip, thigh, and lower leg. There was marked muscle spasm in the low lumbar region and slight limitation of movement in that region. The x-ray findings showed a fracture of the transverse process of the fifth lumbar vertebra.

No. 5—H. E. B., 33 years of age. Injured November 30, 1921, by an automobile body falling on him, causing numerous abrasions and injury to the cervical spine. Examination made one year later. His complaint then was stiffness in the cervical spine, sensitiveness and discomfort on movement of the spine which radiated down the left arm, and to a less extent down the right arm. Previous diagnosis, hypertrophic arthritis. Examination showed limitation of motion in the cervical spine. X-ray examination showed a crush fracture of the bodies of the fourth and fifth cervical vertebrae, with slight backward displacement of the fifth.

No. 6—B. M. B., 54 years of age. Injured August 29, 1922. He fell twelve feet from a scaffolding, striking on his right shoulder and head. Examined three months later. Previous diagnosis, concussion of the brain and sprain of the neck. His complaint now is of constant pain and stiffness of the neck and shoulder. Examination showed marked limitation of movement in the cervical spine below the second cervical, with considerable atrophy of the muscles of the left shoulder. X-ray findings show a compression fracture of the bodies of the fifth and sixth cervical vertebrae and sprain fracture of the body of the fourth and fracture of the superior posterior angle of the right scapula.

No. 7—A. B., 35 years old. Injured March 2, 1922, by being caught in the door of a cotton press, and his shoulders and back pressed violently together. Examined nine months later. Previous diagnosis, neurosis. He complained of pain in the back between the shoulders. This pain radiated forward, greatly increased by lifting and bending. There is bilateral muscle spasm in the middorsal region, and slight limitation of motion in the dorsal spine. X-ray examination shows a rotary disturbance between the sixth and seventh dorsal vertebrae. The descending articulating facet on the right side showed evidences of an old fracture.

No. 8—C. E. P., 64 years old. Thirty-five years prior to examination he fell and was laid up for three months. He gradually improved and returned to work. Has had no particular difficulty until seven months ago, when he fell and struck a step and had a return of his symptoms. Examined April 17, 1923. Previous diagnosis not made. He had been treated by manipulations, with exaggeration of symptoms. The objective symptoms were marked limitation of movements throughout the entire lower dorsal and lumbar spine and muscle spasm. The x-rays show an old fracture of the bodies of the eleventh and twelfth dorsal and first and second lumbar vertebrae, with proliferative arthritis of the first and second lumbar vertebrae. It is felt that, in all probabilities, that the original injury was thirty-five years ago, and that the present injury was a fracture of the fusion between the first and second lumbar vertebrae which the x-rays seemed to demonstrate.

No. 9—A. T. H. Injured February 21, 1923. Examined two months later. Twenty years previous he had a serious injury in a wreck in which his spine was hurt. He was laid up for many months. This injury took place while lifting a heavy weight. No previous diagnosis had been made. He complained, at time of examination, of pain in the middorsal region, which extends downward and forward. Herpes zoster developed, but did not relieve the pain. The scars of the rash were present and marked muscle spasm in the dorsal region. The x-rays showed a compressed fracture of the fifth, sixth, and seventh dorsal vertebrae. There was marked callous formation.

No. 10—H. J. S., 60 years old. Injured April 13, 1923,

in a cave-in of earth. Examined two months later. Previous diagnosis, back strain. He complained of pain in the lower back when stooping or lifting. If he was quiet he was fairly comfortable. The objective symptoms showed marked muscle spasm. There was a structural curve of the spine and limitation of all movements of the lumbar spine. The x-ray showed a sprain fracture of the body of the third lumbar vertebra and a fracture of a superior articulating facet of the fourth lumbar vertebra.

No. 11—J. R., 55 years of age. Injured January 29, 1923, by having a truss fall on him, striking him in the back. Examination made five months later. Previous diagnosis, hypertrophic arthritis. He complained of chronic pain in the low back. The pain was increased by exercise and movement. The objective symptoms were limitation of motion of the entire spine and muscle spasm in the same region. X-ray examination showed a separation of the fused hypertrophic process on the right side between the third and fourth lumbar vertebrae.

No. 12—R. B., 33 years of age. Injured January 20, 1923, when he fell from a scaffolding, striking on his back on a plank. Examined six months later. He complained of backache and headache. The lower dorsal and lumbar spine showed marked muscle spasm. There is a very marked exaggeration of the lumbar lordosis. Previous diagnosis, neurosis. X-rays show a crush fracture of the bodies of the eighth, ninth, and tenth dorsal vertebrae.

No. 13—J. C. G., 34 years of age. Injured May 19, 1923. While lifting a kettle of hot fat weighing about ninety pounds he slipped, and in his effort to throw the fat away from him so as not to scald himself he injured his back. Examined two months later. He complained of pain in the low back and right hip, and of discomfort on forward bending and lifting. Examination showed marked muscle spasm throughout the lumbar region. There was a structural curve of the spine which seemed to be a left dorsal, right lumbar curve. All movements of the lower spine were guarded. X-ray examination showed a fracture of the transverse process of the third lumbar vertebra and of the vertical articulating facet of this same vertebra on the same side.

No. 14—L. W. M., 39 years old. First injured July 9, 1921. At that time he was struck by a freight elevator door while he was standing in the forward flexed position. He was disabled for a number of weeks, but gradually got around, although for a period of one year he complained of back pains. He recovered, however, until he was doing a normal day's work. On March 21, 1923, while in a similar flexed position he was hit in the same region by a truck. He had a similar pain as in the previous injury, and since that time had been unable to work. Examined four months after the second injury. He complained of pain in the low back. The previous diagnosis in each case had been sprain. Objectively, his back showed marked muscle spasm from the middorsal region to the sacral region. The x-ray examination showed a vertical fracture through the lamina of the fourth lumbar vertebra to the right of the spinous process; also a healed similar injury to the fifth lumbar vertebra. In this case it was our opinion that the fractures occurred at the time of the original injury, but the condition was reopened by the second.

No. 15—F. R., 49 years of age. Injured July 9, 1923, by falling into a hopper, with one leg extended and the other flexed, landing on his back on a hard, projecting pipe. Examined two weeks later. Examination showed marked limitation of flexions and extensions of the lower spine. The lumbar and low dorsal muscles were in marked spasm. Previous diagnosis, sprain. X-ray examination showed a crush fracture of the body of the first lumbar, with fracture of the inferior articulating facet of the third on the right side; also a fracture of the lamina on the right side of the second lumbar vertebra.

No. 16—H. H. P., 41 years of age. Injured December, 1922, while endeavoring, with an assistant, to lift a crossbar of steel weighing about three hundred pounds. His assistant slipped, throwing the entire weight on him. Examined nine months later. Previous diagnosis, sacro-iliac slip. He had been manipulated several times—last time under ether—following which he was very much worse. Objectively, his spine showed an extreme list to the right, exaggerated lumbar lordosis and marked muscle spasm from the sixth dorsal vertebra downward and limitation of motion in the lumbar spine. X-ray examination showed an old fracture of the transverse processes of the fourth lumbar vertebra.

No. 17—W. A. C., 28 years old. Injured in 1918 from a fall from an airplane. Examined August 3, 1922. He complained of chronic low back pain on the left side which had been constant since injury. Objectively, there was muscle spasm and limitation of motion in the lumbar region. Previous diagnosis has been neurosis. He had been treated for a long period on this basis in the army hospital. X-rays showed a compression fracture of the first lumbar vertebra and lesser evidences of a compression fracture of the fifth lumbar vertebra.

No. 18—J. P. K., 34 years of age. Injured in a motor-car accident four years ago. Examination made April 6, 1923. He complained of backache intermittently since his injury. Examination showed muscle spasm and limitation of lateral movements of the spine. Previous diagnosis, strain. X-ray findings showed an old compressed fracture of the first lumbar vertebra.

No. 19—J. C. H., 34 years old. Injured March 28, 1923, by falling in the bathroom. He fell in such a way that he was doubled up between the wall and the tub. Examined the next day. He complained of acute pain in the low back. There was marked muscle spasm throughout the entire dorsal spine. He was unable to lift himself up or stand except with great difficulty. The spine sagged laterally, and there was a beginning kyphus. X-ray examination showed a crush fracture of the bodies of the first and second lumbar vertebra.

No. 20—J. D., 30 years old. Injured May 5, 1923, by being struck in the back by a crowbar. Examined four months later. Examination showed marked muscle spasm and limitation of motion of the back. He complained of back pain. Previous diagnosis, sacro-iliac strain. X-ray examination showed a forward luxation of the fifth lumbar vertebra on the sacrum.

No. 21—J. L. S., 33 years old. Injured November 12, 1922, by muscular violence, lifting with a severe twist. Examined in consultation one week later. Diagnosis of fracture of superior articulating facet of the fifth lumbar was made. Two days later was seen by another surgeon, who disputed diagnosis and manipulated the spine without result. Again seen three months later. X-rays showed definite callous development about the fractured facet.

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DISCUSSION

E. W. CLEARY, M. D. (177 Post Street, San Francisco)—Dr. Spiers has brought to our attention a number of points of major significance in investigating back injuries.

My experience has led me to conclude that actual malingering is rare, but exaggeration quite common as a complication of back injuries. Carelessness and lack of precision in the examination of back injuries have contributed to bring about a bad situation. The individual who desires to exploit someone through the compensation law has come to believe that he may readily do so by claiming disability associated with a lame back.

Definite physical signs are, I believe, always present in instances of disabling back injury. It is up to every surgeon who assumes the responsibility of passing opinion upon such a patient to make sufficiently thorough investigation, including x-ray examination to discover the physical signs present. In the absence of physical signs, I believe, that symptoms alone can safely be accepted as proof of disability only in instances where there is an unquestionable history of actual severe and unusual stress having been brought upon the spinal column.

I have not yet seen a compression fracture of a vertebra which I am sure was due to a lifting strain. I have seen several such fractures, which had been attributed to lifting strain, but in every instance careful inquiry discovered a history of a previous severe fall or crushing accident, which, in my opinion, accounted for the vertebral distortion credited to the more recent lifting strain. I would like to ask Dr. Spiers how many compression fractures of vertebrae he has seen which were unquestionably the result of lifting strain.

D. I. ALLER, M. D. (Mattei Building, Fresno)—I have

read with interest Doctor Spiers' excellent paper on fractures of the spine, and I find that he has stressed many points upon which I insist in all severely traumatized backs.

In all spine injuries one never is too careful or exacting in determining the exact nature of the fall, crush, or body position at time of accident.

In my experience, both as to private cases, industrial cases and in work at the General Hospital, there has always been clinical evidence of sufficient moment to warrant a thorough investigation in the x-ray laboratory.

The anomalies of the fifth lumbar vertebra are in some instances apt to be misleading, and may result in an incorrect diagnosis.

It has never been my privilege to see a compression fracture of a vertebra due to a lifting strain; however, do not understand that I question such a possibility in spines weakened from disease or previous injury.

C. E. EARLY, M. D. (Golden State Hospital, Los Angeles)—This paper presents several interesting points. The more proficient we become in the examination of injuries and the interpretation of x-rays, the less malingering we see. Exaggeration of existing symptoms is not uncommon. This is especially noted in back injuries, and is due to a faulty psychological impression often induced by the surgeon. The surgeon treating back injuries should explain, in detail, the condition to his patient, giving him as good a prognosis as possible. A fractured vertebra should never be called a "broken back." Correct mental stimulation is good therapy in back injuries.

Careful, painstaking study and examination with the clothing entirely removed is essential. Examine the entire body. Focal infections and pre-existing diseases are oftimes an important factor in diagnosis, treatment and prognosis. Rectal examination should always be made. I believe that spinal fractures will show definitely localized symptoms. When my patient is unable to localize his pain and rubs his hand over a considerable area of his back, I look upon the case with suspicion. Careful x-ray study is of greatest importance. Stereoscopic and lateral views should be had. It is unfortunate that we are unable to secure lateral views of the upper dorsals, but it is seldom that a compression or crushed fracture occurs in that region.

I have never seen a crushed fracture due to strain, nor do I recall having seen a fractured transverse process due entirely to strain unless it were a very small avulsed chip from the tip of the process. I do not believe a healthy vertebral body was ever fractured entirely by straining. Fractured transverse processes do not cause prolonged disability. The disability ordinarily does not exceed sixty days. In only two cases have I removed fractured transverse processes for continued pain. If I examined a painful back several months after injury and found only fractured transverse processes, I would conclude that there was other cause for the pain.

Impingement of the transverse processes of the fifth lumbar on the iliac crests is more theoretical than real. It seldom if ever occurs unless the process is malformed. Examine a skeleton and note the distance between the process and the ilium; also note the downward and backward curve of the iliac crest. Fractures through the articular processes and facets are rare, but probably occur in many cases where they are not demonstrable by the x-ray.

The percentage of cases that show nerve symptoms is small, unless the crushing has been severe. In these cases the nerve symptoms generally follow immediately upon the injury. In a few cases of compression of the body of a dorsal vertebra I have found pain due to pressure on the nerve root referred around the rib to the front of the chest. Fractures of the fifth lumbar often refer pain down the legs by irritation or pressure on the lumbo sacral nerves.

Remember, in examining back injuries, that we see few spines that are entirely normal. These injuries usually occur during the years of our active working life, and by that time most of us have some deviation from the normal. Remember, also, that there is considerable normal variation in the width of the vertebral bodies.

DOCTOR SPIERS (closing)—Regarding compression fractures due to muscular violence, I have seen one which was unquestionably due to such. Several husky mechanics were testing their lifting ability at a garage. The champion, to demonstrate that he could lift still more, endeavored to lift a weight of about eleven hundred pounds. While in the extreme effort he suddenly cried out in pain and practically "froze" in the position in which he was standing. He was taken immediately to a hospital where x-rays films disclosed a compression fracture of the body of a vertebra. There was no bony pathology present causing any particular weakness to the spine.

Fractures of the transverse processes, in my experience, do cause long periods of disability at times. I have frequently found them among the hardest of cases to give symptomatic relief. I attribute this to the fact that the nerve trunks lie directly anterior to these processes.

I appreciate the discussion this paper has brought forth.

CALIFORNIA ASSOCIATION OF PHYSIOTHERAPISTS

(Reported by Beret Stenvig, secretary San Francisco Branch)

The San Francisco branch of the California Association of Physiotherapists held its meeting on March 11 in the form of a general discussion by the members of the association, with a very interesting and stimulating exchange of ideas on physiotherapy practice.

The next meeting will be on Wednesday, April 8, at 8 p. m. at St. Luke's Hospital, Twenty-seventh and Valencia. Richard W. Harvey, M. D., will speak on the use of hydrotherapy in the treatment of neurasthenia. Following Dr. Harvey's talk, the technician at St. Luke's will give a demonstration in the physiotherapy department.

The Family Doctor as a Community Asset—One of the inducements that leads to the setting up in a small village of a doctor's office is the rendering of service for hire. He locates in a community and grows up with the country and the people. He has succored them in sickness and in sorrow, has battled their diseases, rescued them in their accidents, warned, cheered and exhorted them. *He has been one of them.* He has not only been their physician and surgeon, he has assumed and earned a place of responsibility in their lives, and his interests have become so entwined and thought-bound with theirs that he is in the position of friend and counselor, and he not only is a country doctor, but he remains a country doctor.—Austin Flint, Iowa Medical Journal.

A Convalescent and Rest Home for Nurses—A group of New York women have purchased ten acres of land and provided suitable buildings, personnel, and financing for a convalescent and rest home for nurses. What a beautiful and worthy thought! The earning life of a good nurse is short, and the future after her active usefulness is too problematical. Even at the wages they now charge and to which many unjustly object, these worthy servants of the health of others cannot, even by practicing thrift, provide against the day when they can no longer earn a living. The well-thought-out plan now taking shape in New York might well interest benefactors of mankind elsewhere.

"Syphilis," says the Public Health Service, "may be held responsible for 52 per cent of all the deaths resulting from heart trouble, or 88,417 fatalities. When this sum is added to the 15,811 deaths credited to syphilis by the census figures, the result is a total of 104,228 deaths caused by syphilis directly or indirectly, and this total is arrived at without taking into consideration deaths caused by some other diseases which are in many cases a result of syphilitic infection. Experiments recently made in Paris would seem to indicate that 76 per cent of syphilitics have heart trouble."

EDITORIALS

BUNNELL MEMORIAL

It is fitting that the medical profession of California at the coming meeting in Yosemite Valley should honor the memory of the doctor who, in 1851 as a member of the Mariposa Battalion, the first white men to enter the valley, had imagination enough to appreciate the scenic wonders of the gorge. While his companions would have named it Happy Valley or something equally inane, Doctor Bunnell suggested that they name the valley for the tribe of Indians which lived there and which the battalion was pursuing.

The name "Yosemite" is otherwise appropriate, for it signifies the bear, to this day one of the denizens of the valley, typifying also the State of California.

The committee appointed at the Los Angeles meeting has had a plaque cast in bronze, commemorating Doctor Bunnell and his naming of the valley which, with permission of Mr. Stephen T. Mather, Director of National Parks, it is proposed to mount on a suitable rock at the foot of El Capitan, across the river from where the Mariposa Battalion made its principal camp in the valley, and dedicate it with appropriate ceremonies on Tuesday morning, May 19.

IS THE MEDICAL BAND GETTING TOO FAR AHEAD OF THE HEALTH PARADE?

Whenever the leading band gets too far ahead of the parade, the marchers not only get out of step and become confused, but groups of them are led off to side streets by the tunes of lesser attractions.

That a condition analogous to this is before us in the parade of medical and health progress, is attested by many facts which will readily occur to any reader. Surely, there is a band on every corner, each playing a different tune in a different key. Part of the leading band goes marching on, while other parts have turned back to see what has become of the parade. The paraders are confused and divided, as well they might be. Some are following this or that side show, while others drop into wayside inns for rest and sustenance. Corned beef and cabbage appeal more strongly to many than the blare of the canned music they are urged to follow. While aides of so many colors that they camouflage the whole situation rush up and down the lines exhorting, pleading, and commanding in a hundred tongues, nature, propelled by her inimitable and inexorable laws, rolls upon the paraders, taking toll from many who should be exempt if they only knew where to go and how to get there.

Every limb and branch of the tree of life has its group yelling at the tops of their voices that their branch is the main trunk of the tree, while others soar noisily through the air about until their gas is exhausted when they fall crushed, often taking with them some of the overloaded limbs of the health tree. Is it any wonder that constantly increasing thousands of people are led to mistake the noise, the show, the shadows, for the substance of health? Having been uprooted from their generations of faith in a health leadership that marched close to and hand in hand with them by the razzle and dazzle of a thousand gaily colored lights flickered by false prophets, too many are growing weary of changing step and following where neither they nor their alleged leaders know.

One large group, for example, that has millions of followers, sets up scales, measuring-rods, and other mechanical devices as health diagnostic images for the ails of children. It does not require any particular intelligence to employ the images nor to interpret their readings. According to them, you either have, or have not "malnutrition," "undernutrition," or "overnutrition"—whatever these terms may mean. And having arrived at a diagnosis, you either take milk and vitamins or you don't. Like all "sure cures," based upon "sure fire," quick-acting, infallible diagnostic and treatment features, they do no measurable harm so long as there is nothing the matter. Just recently, there have been reported instances of chronic appendicitis, ulcers of stomach and intestine, tuberculosis, osteomyelitis, rickets, malaria, diabetes, and syphilis that had been diagnosed by totally incompetent persons as "malnutrition" by the use of mechanical diagnostic devices *and treated by milk and vitamins.* The outcome in more than one of these instances was needlessly tragic. One of these days public opinion is likely to be focused on a serious tragedy, and some "near doctors" are likely to be defendants in a manslaughter suit.

Another large group is pounding away upon the slogan of periodic health examinations. Health examinations of themselves have only a statistical value. It's the carefully written record of competent examinations and diagnosis placed in the hands of the person and his physician and followed up by them that is of value. This is precisely what is not being done extensively, nor is there any indication that it is what is wanted by those who make the most noise.

And so we might go on through many, many of the "loud-speaking" practices. Scales and weights furnish incomplete evidence of limited value; medical examinations furnish evidence of great value, *provided* only that in both cases the evidence is written, completed, and checked where necessary, *and* placed in the hands of the patient *and* his physician *and* followed up.

Let us, by all means, encourage the weighing and measuring of school children and all others. Let us have more and more health examinations, but we should stop the idea that is now being absorbed by millions of people that the one furnishes sufficient diagnostic data, or that either are end-results that mean health progress. The average citizen may be more of a moron than some of those who pronounce him so, but he is intelligent enough to understand a broader, more constructive, and more useful health message than he is now getting.

ADVERTISING AND ETHICS

Polk Daniels, in the Howard (Kansas) Courant, says: "Doctors don't advertise. Ethics prohibit. And so the opportunity is open for quacks to unload fake nostrums and cures upon the uninformed public. No wonder a French woman asked: 'What is an ethic?' "

"We have been accustomed and resigned to hearing this specious stuff," says the Medical Standard editorially, "but we are going to make one more effort, just the same, and rise to remark once more that it is specious and silly. WHAT IN THE WORLD HAS THE DOCTOR TO ADVERTISE? He puts up a shingle or a plate outside his door, and probably carries a card in his town newspaper if he lives in any other than a large city, and this announces to the public that he is a properly qualified practitioner examined and licensed by the state to treat the sick. If he is a specialist in some particular branch of medicine, his sign or his card announces that he treats diseases of the eye, ear, nose and throat, or diseases of children, or whatnot. WHAT ELSE, IN HEAVEN'S NAME, COULD HE TELL?

" . . . The argument that the doctor's refusal to go any further in advertising himself 'opens the opportunity for quacks to unload fake nostrums and cures upon an uninformed public' is both gratuitous and foolish. In the first place, even if that were true, it would not be a valid argument. That the quack, by utilizing improper means of exploitation, is able to put himself across is no justification for the decent practitioner employing improper methods of publicity. In a certain sense the unscrupulous man always has an advantage over a gentleman; he can and does perpetrate things that the gentleman's code prohibits him from doing. But to argue that the gentleman should adopt the cad's methods is an argument as silly and vicious as it is old. That being done, there would then be absolutely no way of differentiating the gentleman from the cad.

"But, as a matter of fact, the statement upon which the argument is based hasn't a grain of truth in it. The informing of the public on matters of true and false medical claims and medical achievement is not a subject for individual advertising, but for education and instruction at the hands of the profession at large; and everyone with a handful of sense knows perfectly well that in no department of human activity has there been such a widespread and efficient campaign of public enlightenment as in that which pertains to health and sickness and the treatment of the sick.

"So far from compromising with the methods of the quack, the decent methods of the profession have driven the old, rotten quack advertising from the face of the earth, and forced the quack to observe some form of decency, at all events. *The quack is on the defensive nowadays. In order to survive at all, he has to pay the homage which vice pays to virtue, and imitates the reputable physician.*

"*An uninformed public—tra-la-la! The public, in the main, knows quite well the difference between the reputable medical man and the quack.* The trouble is that a large proportion of the dear public actually like quackery; and that will be true for a long time to come. And if, as our critics suggest, the reputable medical practitioner were to throw ethics to the winds and advertise in the same manner as the quack, that portion of the public would turn to him, *not because he was a reputable, decent practitioner, but because they would take him to be a quack.*"

There is still another phase of Mr. Daniels' criticism of medical ethics. He overlooks the fact that his public press also has a code of ethics even longer than that of physicians. His code, among other things, stands for *"truth in advertising."* Admitting as he does that quacks advertise, we would like to ask him what he does with *his* ethics when he accepts a quack's advertising copy. Most good newspapers live up to their ethics as do most good doctors, but still far too many of both classes skate along the edge of honesty and some still continue to slop over.

It is pretty poor taste for a paper or periodical to criticize doctors for trying to live up to a moral code of procedure because that code prevents the periodical from selling space for unworthy purposes, while at the same time the publication sells space for purposes which the ethics of its own profession prohibits.

"Truth in advertising" in essence is part of medical ethics as it is of newspaper and magazine advertising ethics.

We should all "hold fast to that which is good."

THE FUTURE OF THE MEDICAL PROFESSION

In his presidential address before a branch of the British Medical Association, Thomas MacCarthy speaks conservatively of a situation that is only a few jumps ahead of us and on the road we are traveling in high with the gears locked. Among the things he said were that: "It is well that we should consider from time to time non-scientific subjects which concern the honor and welfare of our profession. The pressure of hard circumstance has compelled us to spend much time and thought on medico-political matters during past years, more especially since 1912 (when the compulsory health insurance went into effect), and this has been necessary unless we were content to allow the best interests of our profession to go by default. By interests I do not mean merely, or even mainly, financial ones, but our professional interests in the art of healing. We have been engaged in a hard struggle to maintain what is best, and have had to contest the ground foot by foot. We are still doing so, and I can see no chance of any surcease from strife in the immediate future, but rather from time to time fresh exacerbations of it. . . .

"It is commonly and truly said that change of occupation is as good as a holiday, but he would be a bold man who advised the overtaxed doctor to turn his thoughts, as a relaxation from his professional work, to the consideration of the medico-political problems with which he is surrounded and oppressed. Nevertheless, it is of the first importance to all of us, and to those who come after, that we should try to work our way through these difficulties. . . .

"As a profession we are prone to go on doing our work, striving to keep up with the progress of science in so far as it concerns the practice of physic, and not to heed the changes in social and political thought and the effects these must have on our profession, until a momentous change rapidly comes within the range of practical politics and soon is an accomplished fact, leaving us stampeded by its apparent suddenness. Such a change is often called revolutionary. At first sight it may seem so, but most of the changes are evolutionary and of comparatively slow growth. The actual change is sudden, but the factors producing it are of a steadily accumulating nature. One with eyes to see can tell what the gradually increasing weight must do some time before the catastrophe occurs.

"The days are gone, never to return, when the

doctor can plough his furrow in his own way, thinking only of his patient and how best to treat his malady, working just as an individual and according to his conscience. For good or ill the state has stepped in, or, perhaps more properly, has put both feet in, and in the future will interfere more and more with what it considers to be the interests of its citizens. The health of the community is of such importance that the state feels that the best skill and attention must be available for everyone, and apparently is on the way to making medical service a national one, as the army and navy are.

"Things have progressed too far to go back on these arrangements; we must accept them as they are, . . . for the only alternative to the present system is a whole-time state medical service, which, in the best interests of the community, we wisely side-tracked by accepting the panel system. . . .

"There are about 13 millions of insured persons in England and Wales, and the ministry of health estimates their dependents at 17½ millions. The inclusion of these latter for medical attendance has been in the minds of many from the very beginning, but it was thought better to start on the workers as being a more manageable and less expensive matter, and if this proved a success the addition of the dependents would follow. It is fairly obvious that adequate treatment is just as necessary for the dependents as for the insured person in the interests of public health. Financial stringency is a bar, but we must remember that where the health of the community is at stake, or (what amounts to the same thing) is thought to be at stake, money will be found. When and if this extension takes place there will be over 30 millions of the population attended on the panel system. Secondly, there is an insistent and growing demand for an extension in the range of medical services for insured persons, to include everything—operation, consultations, specialist services. This is being pushed forward very vigorously at the present moment, especially by the approved societies, and cannot be long delayed.

"It does not require much imagination to realize that the increase in number from 13 to 30 millions, coupled with the scheme embracing all kinds of medical services, must greatly alter medical practice for us all, and make us to a still greater extent a state-paid and state-regulated profession. At present only general practitioners are intimately concerned, and not all of these, but with the extensions foreshadowed still larger proportion of these, and even specialists and consultants, will be involved. Another important factor is the hospital question. This is a large and complex matter which is causing a great deal of discussion with, so far, apparently little result. It is, however, slowly crystallizing, and a few years will find us at grips with it as we now are with the panel question.

"A satisfactory solution of this hospital question is a matter of great importance to all who do hospital work, but I do not propose to enter into it save to suggest that the voluntary system, which is so in keeping with the genius of this country and under which such a high state of efficiency has been attained in hospital service, is not likely to continue much longer."

ALCOHOL AS A METABOLITE IN NORMAL TISSUES

Ever since W. Hutson Ford of New Orleans demonstrated (in 1872) that tissues of animals contain preformed alcohol, investigators have debated from time to time the possible origin of this normal alcohol. The quantity and concentration, of course, are not very large, though large enough to permit quantitative estimation. Pringsheim and Schweisheimer estimated the following concentrations: Rabbit blood, 0.0018 per cent; rat muscle, 0.0028 per cent; rat liver, 0.0023 per cent; human blood, 0.0029 to 0.00367 per cent. Although these concentrations appear trifling, they are not so small when they are compared with certain ordinary metabolites of the blood, and with reported concentrations of alcohol after its oral administration. For instance, Miles found the concentration in blood during the first two hours after taking one liter of 2.75 per cent alcohol to be from 0.018 to 0.03 per cent, and 0.028 to 0.036 per cent after taking 100 cc. of 27.5 per cent alcohol. The appearance of alcohol in blood and organs of individuals not receiving it suggests its origin from the dietary or tissues, or both. Its origin appears to be rather complicated. The fact that the blood alcohol varies somewhat with carbohydrate diet indicates that the class of carbohydrates is responsible in part, at least.

Recently, Kühn of Jena has suggested the following schematic representation of its formation from sugar; dextrose → glycerine and triose → d-lactic acid → d-alanin and pyrocatechuic acid → acetoacetic acid, acetaldehyde and ethyl alcohol → acetic acid, which is finally oxidized to carbon dioxide and water. Accordingly, ethyl alcohol may be regarded as an intermediary product of carbohydrate metabolism, a fact perhaps hitherto insufficiently appreciated. As long as the alcohol does not exceed certain concentrations, it would hardly be regarded pharmacologically as a protoplasmic poison. However, the information regarding the concentrations in disease conditions, in anomalies of metabolism, and the effects from low concentrations over very long periods is lacking. The few existing investigations of the concentration of alcohol in blood and cerebrospinal fluid of normal and alcoholic individuals after ingestion of alcohol under practically acute conditions do not furnish the information desired about disease and chronic conditions. The recent studies of Kühn do not quite meet these latter requirements, but are nevertheless worthy of attention.

Kühn studied the blood alcohol of abstinent students from 21 to 26 years old, during starvation, on a carbohydrate diet and after the administration of small quantities of alcohol. The concentration in the blood of starved subjects ranged from 0.0006 to 0.0051 per cent, average 0.00154 per cent, which is about one-third of that claimed previously. These figures were not changed when the subjects were on a liberal carbohydrate diet. After the administration of from 18 to 26.6 cc. of absolute alcohol with liberal carbohydrate diet, the alcohol content increased to an average of 0.0033 per cent, the maximum con-

tent found at the end of an hour being 0.0057 per cent. The blood alcohol, after drinking two bottles of German beer, with a liberal carbohydrate diet, was less than the blood alcohol on the diet alone. The cause of this inhibitory influence of the dietary was not ascertained, but some interference with the absorption of the alcohol of the ingested liquor is suggested. A curious feature is that the blood alcohol of carbohydrate dietary alone was decreased when alcohol was taken with the diet, as though the presence of alcohol in the alimentary tract prevented or inhibited the process originating dietary alcohol. From this it is suggested that the blood alcohol of dietary has a fermentative origin in the alimentary tract which leads up to a further suggestion, namely, that blood alcohol might serve as a useful criterion of intestinal fermentation and putrefaction, instead of the blood phenol frequently employed.

The fermentation theory of blood alcohol is not new, but neither the theory nor the entire question of blood alcohol have received the attention that they appear to merit. The work of Kühn does not quite agree with the results of the older investigators, but it has the merit of having been done with accuracy and of calling attention again to a matter that deserves more than passing notice.

Ford, W. H.: N. Y. Med. J., 1872, 15:561—"Normal Presence of Alcohol in the Blood."

Pringsheim, J.: Biochem. Zeitschr. 1908, 12:143—"Chemische Untersuchungen über das Wesen der Alkoholtoleranz."

Schweisheimer, W.: Dtsch. Archiv. f. klin. Med., 1913, 109:271—"Der Alkoholgehalt des Blutes unter verschiedenen Bedingungen."

Miles, W. R.: J. Pharm. Exp. Therap., 1922, 22:265—"The Comparative Concentrations of Alcohol in Human Blood and Urine at Intervals After Ingestion."

Kühn, G.: Arch. exp. Path. Pharm., 1924, 103:295—"Untersuchungen über Alkohol. II. Mitteilung: Uber den Alkoholgehalt des menschlichen Blutes im nüchternen Zustand, nach Kohlehydratzufuhr und nach Genuss geringer Alkoholmengen."

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL OPENS GRADUATE SUMMER COURSES

Announcements have been sent out that the University of California Medical School and the University of California Hospital will give summer courses to graduates in medicine, surgery, and medical specialties between dates of June 15 and July 11. Doctor Eugene Kilgore is director of the courses.

PRACTICAL THERAPEUTICS AND THE ART OF MEDICINE

Abstracts from Alumni Lectures, University California Medical School, 1924

Dr. Dewey R. Powell—I would rather do $100 worth of work for $25 and know the person will be able to pay without depriving his family of the necessities of life, thereby gaining a friend, then charge $75 or $100 and have it pain in small dribbling amounts and leaving the impression of being overcharged.

Dr. James Sewell—You will be called on to take an active part in politics in the community in which you reside. You should regard it as your duty. If we are to have a free country, if we are to have a country we can love and respect, we must all take part in its government. You don't need to be too active nor too partisan, but pay enough attention to what is going on, so if patients ask for advice—as they do—you can tell them what to do.

Dr. J. Wilson Shiels—The "old doctor" should not pass. As a matter of fact, the young, well-educated medical man can, in reverence, emulate him.

California Medical Association

GRANVILLE MacGOWAN, M. D., Los Angeles..President
EDWARD N. EWER, M. D., Oakland.....President-elect
EMMA W. POPE, M. D., San Francisco.....
.....Secretary and Associate Editor for California

YOSEMITE AND THE ANNUAL SESSION, MAY 18-21, 1925

Spring comes early to Yosemite National Park. Already the meadows are turning green and soon they will be filled with all kinds of blossoms which have given Yosemite the sobriquet of "The Park of a Thousand Flowers." There will be Mariposa lilies, snowplants, evening primroses, and scores of less famous flowers, blooming in the emerald meadows or in the rich forest mold underneath the giant trees.

However, this article is not to be an adjective-laden description of Yosemite's natural charms, of which everybody knows, but a precise statement of what kind of weather may be expected by the members of the California Medical Association during the annual convention May 18 to 21. Of course, it is impossible to predict, but official government records of weather conditions over a long period of years certainly will be indicative of possibilities.

"One often reads praises and generalities about Yosemite climate and weather," says Park Naturalist Ansel F. Hall, in his most excellent book, "Handbook of Yosemite National Park," "but, so far as the writer knows, no concise statement as to exactly what might be expected at any given time of year has ever been published.

Recent reports from the Valley Incomparable indicate an early spring, and May should be unusually beautiful. Heavy snows during the winter will make the falls run in large volume and the plant life extremely luxuriant. The Wawona Road will probably be passable in April this year, so that those professional men who desire to drive to Yosemite in their own automobiles should find the road in good condition the middle of May. The majority of the visitors doubtless will go the easier and more beautiful route by train via Merced to El Portal through the canyon of the Merced River and the old gold diggings, and by Yosemite Transportation System automobiles, fifteen miles over the government boulevard from El Portal to Yosemite Valley, still paralleling the Merced River and passing through the famous "Gates of Yosemite," where El Capitan stands on one side, Three Graces and Bridal Veil Falls on the other, with a wonderful vista in the distance.

The road from Yosemite Valley to the Mariposa Grove of Big Trees also will be open during the convention, affording delegates and their families the opportunity to see what experts say is the finest of all groups of sequoia gigantea. The Yosemite Transportation System will operate daily motor-car trips during the convention from Yosemite Valley to the Mariposa Grove of Big Trees by way of Artist and Inspiration Points. Another interesting trip operated daily is the tour of Yosemite Valley.

ANNUAL SESSION C. M. A., YOSEMITE, MAY 18, 19, 20, 21, 1925

The Fifty-fourth Annual Meeting of the California Medical Association promises to be well attended, 400 reservations having already been made.

Due to the most efficient co-operation of section secretaries, the completed program appears in this issue of CALIFORNIA AND WESTERN MEDICINE. The program holds much of interest for the membership, and should secure a good attendance at section meetings, despite the counter-attractions of beauty and grandeur in our wonderful Yosemite Valley.

The March issue should be referred to for any information concerning hotel rates and train schedules.

DELEGATES AND ALTERNATES TO A. M. A.

California delegates to the A. M. A., with their corresponding alternates, are:

Victor G. Vecki, San Francisco, 1925; alternate, C. Van Zwalenburg, Riverside, 1925.

Hans Lisser, San Francisco, 1925; alternate, William E. Stevens, San Francisco, 1925.

Albert Soiland, Los Angeles, 1925 and 1926; alternate, Charles D. Lockwood, Pasadena, 1925 and 1926.

Robert V. Day, Los Angeles, 1925 and 1926; alternate, Robert Pollock, San Diego, 1925 and 1926.

Lemuel P. Adams, Oakland, 1925 and 1926; alternate, O. D. Hamlin, Oakland, 1925 and 1926.

For full details, see minutes of 150th meeting of the Council, as published on this page.

ABSTRACTS FROM THE MINUTES OF THE ONE HUNDRED AND FIFTIETH MEETING OF THE COUNCIL OF THE CALIFORNIA MEDICAL ASSOCIATION.

Held in the offices of the editor of CALIFORNIA AND WESTERN MEDICINE, 806 Balboa Building, San Francisco, California, Saturday, February 14, 1925, at 10 a. m.

Present—Doctors Parkinson, MacGowan, Ewer, Alderson, Musgrave, Kinney, Kiger, Edwards, De Lappe, McArthur, Gibbons, Hamlin, and Pope.

Absent—Doctors Beattie, Coffey, Smith, McLeod, Bine, Kress, Curtiss, and General Counsel Peart.

The secretary reported that Rene Bine and General Counsel Peart were both unable to attend because of illness. G. H. Kress of Los Angeles and C. L. Curtiss of Redlands were also unable to attend because of illness. Letter from J. H. McLeod of Santa Rosa was then read, in which he conveyed his regrets that he would be unable to attend any but the evening session.

Minutes of the Council—On motion of Kiger, seconded by McArthur, it was

RESOLVED, That the minutes of the 148th and 149th meetings of the Council as mailed to each member thereof be approved.

Minutes of the Executive Committee—The secretary read the minutes of the 79th and 80th meetings of the Executive Committee.

Action by the Council—On motion of Kiger, seconded by Gibbons, it was

RESOLVED, That the minutes of the 79th and 80th meetings of the Executive Committee be approved and made an official part of the minutes of this Council.

Resignation of T. C. Edwards as Delegate to A. M. A.—T. C. Edwards of Salinas presented his resignation as a delegate to the A. M. A.

Action by the Council—On motion duly made, the resignation of T. C. Edwards of Salinas as a delegate to the A. M. A. was accepted.

Delegates to A. M. A.—The secretary reported that, by reason of the increase in membership, the C. M. A. was now entitled to five delegates and five alternates to the A. M. A., and also stated that it would be impossible for the California House of Delegates to elect the necessary delegates and alternates at its annual meeting on May 20 and comply with the requirements of the A. M. A. That it would, therefore, be necessary for the Council to take some action in the matter prior to the annual meeting, in order to secure the proper certification of delegates at the A. M. A. convention; such action to be later confirmed by the California House of Delegates. The following are those delegates with corresponding alternates, whose terms expire: Albert Soiland, Los Angeles; alternate, Robert V. Day, Los Angeles. John C. Yates, San Diego; alternate, Charles D. Lockwood, Pasadena.

Action by the Council—On motion of McArthur, seconded by Kiger, it was

RESOLVED, That Albert Soiland and Robert V. Day, both of Los Angeles, be elected as delegates to the A. M. A. for the ensuing two years.

Alternates to A. M. A.—On motion of Kiger, seconded by McArthur, it was

RESOLVED, That Charles D. Lockwood of Pasadena be elected as alternate to Albert Soiland of Los Angeles for the ensuing two years; and that Robert Pollock of San Diego be elected as alternate to Robert V. Day of Los Angeles for the ensuing two years.

Delegate to Replace T. C. Edwards, Resigned—On motion of Alderson, seconded by Gibbons, it was

RESOLVED, That Hans Lisser of San Francisco be elected delegate to the A. M. A. to fill the unexpired term of T. C. Edwards of Salinas, resigned; William E. Stevens of San Francisco remaining as alternate to Doctor Lisser.

Fifth Delegate to A. M. A. Under 1924 Apportionment—The election of a fifth delegate and corresponding alternate as apportioned by the A. M. A. for the 1925 session and thereafter was brought up. The question was then raised as to whether such representatives should be elected from the North or the South, to conform with the usual custom of giving equal representation to the North and the South.

The Chair suggested that it be decided by lot from what district the fifth delegate should be elected for the 1925 and 1926 sessions. The decision fell to the North; and it was the sense of the Council that, at the expiration of such term the fifth delegate would be elected from the South and, thereafter, alternate each second year between the North and the South. The election of the fifth delegate and alternate was postponed till the afternoon session.

Election of Trustee of Indemnity Defense Fund—The secretary advised the Council that the term of William Duffield of Los Angeles as a trustee of the Indemnity Defense Fund had expired January 1, 1925.

Action by the Council—On motion of MacGowan, seconded by Alderson, it was

RESOLVED, That William Duffield of Los Angeles be elected to succeed himself for the ensuing three years as a trustee of the Indemnity Defense Fund.

Medical Radio Broadcasting—The secretary read a report from the Committee on Medical Radio Broadcasting as submitted by the chairman, George H. Kress of Los Angeles. This report and the question in general was then fully discussed.

Action by the Council—On motion of Ewer, seconded by Gibbons, it was

RESOLVED, That the report of the Committee on Medical Radio Broadcasting be adopted as submitted, and that action be taken as outlined therein.

Membership Directory—The Chair raised the question of including in the membership directory the home address, as well as the office address, and both telephone numbers of all members; and recommended that such additions be made to the next directory.

Action by the Council—On motion of McArthur, seconded by De Lappe, it was

RESOLVED, That the home address, office address, and both telephone numbers of all members be included in the next issue of the membership directory.

Income Tax Deductions—The president submitted the following amendment to the Revenue Act as prepared by the general counsel, in accordance with instructions re-

ceived at the last Council meeting. (Words in italic type comprise the proposed amendment.)

"Sec. 214 (a), In computing net income, there shall be allowed as deductions: (1) All the ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade, business, *or profession*, including a reasonable allowance for salaries or other compensation for personal services actually rendered; traveling expenses (including the entire amount expended for meals and lodging) while away from home in the pursuit of a trade or business, *or profession, or in attending professional conventions of the profession of which the taxpayer is a member.*"

The president then stated that the best way would be to have some member of the House of Representatives present this amendment and have the united medical profession of the country support it.

Action by the Council—On motion of De Lappe, seconded by McArthur, it was

RESOLVED, That the amendment to the Revenue Act as proposed by the general counsel be adopted; and that the secretary be instructed to take the necessary steps to have the amendment passed, and to place the matter before the various state medical, bar, and other professional associations of the Union.

Legislative Procedures—The secretary read, for the information of the Council, a report submitted by the general counsel regarding legislative procedures. No action was taken.

Application for Affiliate Membership—The secretary presented an application from Doctor J. S. Wheeler of Lincoln for affiliate membership, together with endorsement of such application by the secretary of the Placer County Medical Society.

Action by the Council—On motion of Alderson, seconded by Ewer, Doctor J. S. Wheeler of Lincoln was elected an affiliate member of the California Medical Association.

Status of Associate Members of County Medical Societies—The secretary read a letter from Councilor Kinney, covering the situation now existing in San Diego County and calling attention to discrepancies in the state constitution and by-laws regarding associate membership. The secretary then reported that the general counsel suggested that the Council temporarily take care of the situation and that he would prepare an amendment to the constitution for presentation at the annual meeting.

After full discussion, it was the sense of the Council that no action be taken in the absence of a report from the general counsel, and that the matter be postponed till the annual meeting.

History of the California Medical Association—Suggestion of Councilor Kress of Los Angeles that the Council appoint a "Committee on the Preservation of the History of the California Medical Association" was considered. The Council was informed that there were several medical historical societies now in existence in California.

Action by the Council—On motion of McArthur, seconded by Kiger, it was

RESOLVED, That the chairman, if deemed wise after a thorough investigation, be authorized to appoint a committee of three or five on the "Preservation of the History of the California Medical Association"; and further that the chairman be included in the membership of such committee.

Financial Statements—Detailed statements of the finances of the California Medical Association and California and Western Medicine were presented for discussion, in accordance with instructions given at the last Council meeting; copies of such statements having been mailed to all members of the Council.

After general discussion, it was the sense of the Council that financial statements be included in the report of the Council to the House of Delegates and, at the same time, that the association be advised that every fraternal publication must be credited with one-half the subscription price of such publication for every member of the association.

Present Status of the Journal—The editor reported that in 1924 the Journal had published 1536 pages, 864,000 words of reading matter, exclusive of advertising; 117 original articles, and had rejected 19 manuscripts. He also advised that on February 14, 1925, 127 accepted but unpublished manuscripts were on hand, which did not include the material for the Historical (May) number; and that this is more than a year's supply of articles. He then requested recommendations or suggestions as to how this congestion was to be relieved; whether by adding another folio and thereby increasing materially the cost of the Journal, or by being more critical in accepting manuscripts. After a full and general discussion, the editor submitted the following resolution:

"WHEREAS, The increasing prominence of CALIFORNIA AND WESTERN MEDICINE is resulting in a marked increase in the number of articles offered for publication, thus amplifying the editor's responsibilities in deciding what to accept and what to decline, now, therefore, be it

"RESOLVED, That the editor is authorized and instructed to arrange with such members of the California Medical Association as he sees fit to serve as members of an editorial council. It shall be the duty of these editorial councilors to advise with and assist the editor with his problem of accepting and declining matter submitted for publication. Following the usual custom of periodicals, the names of members serving on this council will be kept confidential between the editor and each member."

Action by the Council—On motion of Edwards, seconded by McArthur, it was

RESOLVED, That the resolution as submitted by the editor be adopted as the sense of the Council; and that the question of relieving the congestion in the publication material for CALIFORNIA AND WESTERN MEDICINE be further considered and made a part of the report of this Council to the House of Delegates, together with the financial report for 1924 and the outlook for 1925.

Subscription Price of Journal—The editor recommended that the paid subscription price of CALIFORNIA AND WESTERN MEDICINE be increased to $5 per year and 50 cents per single copy, as the actual cost of publishing the Journal is more than the present subscription price, which is $4 per year.

Action by the Council—On motion of MacGowan, seconded by Gibbons, it was

RESOLVED, That, commencing with the March issue of CALIFORNIA AND WESTERN MEDICINE, the paid subscription price be fixed at $5 per year and 50 cents per single copy.

Publication Cost of Journal—The secretary presented a report from the James H. Barry Company covering the present publication cost of CALIFORNIA AND WESTERN MEDICINE, as requested by the Executive Committee at its last meeting.

Action by the Council—On motion of Edwards, seconded by McArthur, it was

RESOLVED, That the Council, having heard the report of the James H. Barry Company on the present publication cost of CALIFORNIA AND WESTERN MEDICINE, recommends that commencing with the March issue, the cost to the Journal be based on the following monthly rates: Five thousand copies, 128 pages and cover, $1,600; additional 100 copies, $26.25; this being an increase of approximately 5 per cent over the present cost.

Commissions on Journal Subscriptions—The question of paying commissions on Journal subscriptions, as referred to the Council by the Executive Committee, was considered.

Action by the Council—On motion of Kiger, seconded by De Lappe, it was

RESOLVED, That, upon recommendation of the editor, the payment of commissions on subscriptions to CALIFORNIA AND WESTERN MEDICINE be not approved.

Legislative Matters—Mr. Celestine J. Sullivan, executive secretary of the League for the Conservation of Pub-

lic Health, being present by request, submitted a digest of the medico-legal bills now before the Legislature, which were then fully discussed.

Action by the Council—On motion of McArthur, seconded by Kiger, it was

RESOLVED, That the Council, having heard the report of the League for the Conservation of Public Health on proposed legislation touching public health and public welfare, believes that such measures should have wide publicity to elicit comment and suggestions from those interested.

Election of Fifth Delegate to A. M. A.—On motion of Kiger, seconded by Alderson, it was

RESOLVED, That Lemuel P. Adams of Oakland be elected as the fifth delegate from the California Medical Association to the American Medical Association for the ensuing two years.

Election of Fifth Alternate to A. M. A.—On motion of Kiger, seconded by Alderson, it was

RESOLVED, That O. D. Hamlin of Oakland be elected as alternate to Doctor Lemuel P. Adams for the ensuing two years.

Clinical Prize—The Chair reported that he desired to confer with Councilors Bine and Kress, both of whom were absent, before appointing the "Committee on Clinical Prizes," and, therefore, requested further time, stating that the matter would be included in the annual report of the Council, and in that manner would go before the association as a whole.

It was the sense of the Council that the matter be referred over to the next meeting.

Medical Section of Officers' Reserve Corps—The Chair reported that he had succeeded in securing from the Surgeon-General's office a list of the Reserve Officers in California, and that it was the Surgeon-General's desire that members of this committee be composed of members of the Reserve Corps and those who would be most influential in securing members for the corps.

After discussion, it was the sense of the Council that a statewide committee of fifteen be appointed to function separately from the California Medical Association, but that the personnel of such committee be limited to members of the association only; and that further time be extended the Chair in the matter of appointment of such committee.

Attendance at Council Meetings—The question of attendance at Council meetings was considered, and the secretary was instructed to ascertain if there was any ruling or section in the old records or constitutions prior to 1900 that covered this point.

Sciences Allied to Medicine—The secretary reported that, in accordance with instructions received at the last Council meeting, she had endeavored to secure a ruling from the A. M. A. as to "what constitutes sciences allied to medicine"; and that the secretary of the A. M. A. had just wired that the Judicial Council was still considering the question and that it would probably be some time before a decision was reached. Pending receipt of a report from the A. M. A., no action was taken.

Status of Legal Department—The secretary presented, for the information of the Council, a brief report prepared by the general counsel on the present status of the legal department.

Expression of Regret—The secretary was instructed to convey to the General Counsel and those members, whose illness prevented attendance, the sincere regrets of the Council at their enforced absence from this meeting.

Report of Committee on Prenatal Care—The secretary presented the report of the Committee on Prenatal Care as submitted by the chairman, Reginald Knight Smith.

It was the sense of the Council that the secretary be instructed to furnish mimeographed copies of this report to each member of the Council, as the length and importance of this report demanded more detailed consideration; and that each Councilor be requested to return his signed copy with suggested changes or approval.

Adjournment—There being no further business, the Council adjourned to hold an open meeting with the Committee on Industrial Medical Practice.

ALAMEDA COUNTY

Alameda County Medical Society (reported by Pauline S. Nusbaumer, secretary)—At the regular meeting of the Alameda County Medical Association held February 16, the following program, arranged by George Rothganger, was presented by the staff of Merritt Hospital:

A case report of diabetes complicated by gout was given by Hobart Rogers and A. H. Rowe, and was followed by a symposium on the treatment of fractures of the extremities. "The Closed Treatment," by Sumner Everingham; discussion opened by H. H. Hitchcock. "Treatment by Open Operation," by Mark L. Emerson; discussion opened by F. J. Carlson. "Treatment of Complications," by Warren B. Allen; discussion opened by D. N. Richards. "Treatment of Non-union," by George Rothganger; discussion opened by W. L. Bell. In his paper, "Closed Treatment of Fractures," Sumner Everingham said that careful early treatment of fractures is essential to give best results anatomically and functionally; that of prime importance is an x-ray to (1) demonstrate the presence of a fracture, (2) the variety and position of the fragments, (3) a co-existing dislocation, and (4) the presence of gas gangrene; that the essentials for successful treatment of long bones are (1) to replace the broken ends at the earliest possible moment, (2) proper retention until nature has provided for adequate healing in restoring the continuity, (3) adequate supervision of the nutrition and function of the soft parts by massage, electricity, passive and active motion. In discussing "The Open Treatment of Fracture," M. L. Emerson said that less than 2 per cent of fractures are subject to open treatment. Wire of some type is still pre-eminent as a means of fixation. In regard to the discussion of which is the better in non-union—internal medullary beef bone splint, external periosteum osteal sliding graft, or wire. He suggests the use of all three. Perhaps one of them will give the desired results. He advises against putting one's faith in any *one* method. The doctor has discarded the use of kangaroo tendons in any type of bone work. In the treatment of fracture complications, Warren B. Allen calls special attention to injured parts following fracture to prevent thrombosis and embolism. He thinks that symptoms of fat embolism are frequently overlooked. The writer claims that the diagnosis of fat embolism is facilitated by finding fat globules in the urine. The doctor also states that nerve injuries frequently are not discovered until the splints have been removed weeks later, and he gives hemorrhage into joints as a cause for ischemic paralysis. In his paper George Rothganger stated non-union should be distinguished from delayed union, which follows so frequently upon crushing and automobile fractures. Failure of union in the great majority of cases is due to malposition, occurring rarely with good contact of fragments. In such cases of malposition excision of the overlapping ends and correction of the displacement is satisfactory. In those with loss of substance and in the rare cases of non-union with good approximation, some type of transplant must be used, the writer giving the special type for each long bone.

As is the custom after the close of the program, refreshments and a social hour were enjoyed.

The annual banquet of the association was celebrated on Wednesday evening, February 18. Some 150 of the members attended. Spring flowers in profusion formed the decorations upon all of the twenty odd tables.

The speakers' long table at the head of the room was occupied by the speakers and the officers of the association and O. D. Hamlin and S. H. Buteau, two of the deans of the medical profession of Alameda County. The president gave a brief address of welcome, and vocal music was dispensed throughout the evening.

One of the interesting pleasantries was an address by E. N. Ewer on many original topics of the day regarding the profession and the public, which was not only interesting and pleasing, but subtle in the extreme. The speaker of the evening was Mr. Franklin H. Kean. His

subject was "The Physician as the Man." Mr. Kean held his audience enchanted from the opening to the closing of his address.

Judged by the expressions of enjoyment by the guests, the evening was very worth while, and the president, H. B. Mehrmann, has every reason to be proud.

At the regular meeting of the Merritt Hospital Council held February 2, Charles L. McVey president, the program was divided into three main sections: 1. Hospital betterment under which any member is invited to offer suggestions or participate in discussions. 2. The paper of the evening, "Liver Abscess," by W. E. Mitchell. 3. Case and autopsy reports, mistakes in diagnosis, new therapy or technique, etc., any number invited to take part.

CONTRA COSTA COUNTY

Contra Costa County Medical Society (reported by L. St. John Hely, secretary)—The regular monthly meeting of the Contra Costa County Medical Society was held at the Women's Clubrooms at Walnut Creek, Saturday, February 28, under the direction of J. Emmett Clark. The meeting was called to order at 9:30 p. m. by the president, Dr. Denninger-Keser. The minutes of the previous meeting were read and approved.

Discussions were entered into and a motion made and carried that each program chairman would have three months' notice to prepare for the meeting, to get speakers, place of meeting, etc. This was adopted as a permanent ruling. A committee of three was appointed, two members to hold office for the year, and for the third, the special program chairman appointed for the one meeting. J. Emmett Clark was appointed as the permanent member for the year 1925. The secretary will always be the other, as he will be in a position to handle all the correspondence.

The next meeting will be held at Martinez.

The speaker of the evening was George Warren Pierce of San Francisco. His subject was "Care of the Injured Hand." He illustrated his lecture with lantern slides, and handled the subject in a masterly style. We were very fortunate in securing him, as he is master of the subject. The following members were present: George McKenzie, J. Emmett Clark, E. C. Love, E. Merrithew, John Beard, Rosa A. Powell, H. L. Carpenter, Denninger-Keser, L. St. John Hely, C. R. Leech.

FRESNO COUNTY

Fresno County Medical Society (reported by T. Floyd Bell, secretary)—A meeting of the board of governors of the Fresno County Medical Society was held March 2, 1925, in Dr. Anderson's office. Drs. Couey, Cross, Miller, Tillman, Anderson, and Bell present.

Bills were audited and ordered paid. The secretary announced the withdrawal of the application for membership of Dr. H. Robertson. (Note: Through a publication error, Dr. Robertson was reported last month elected to membership.)

The president and secretary were instructed to act as delegates to the general council of the Fresno Community Chest.

In regard to the examination of children entering school for the first time, Miller moved, Tillman seconded, that the board recommend that the society undertake such examinations as requested by the Children's Bureau of the State Board of Health and the Fresno City School Department. Uniform examination blanks were requested. These examinations are to be done in the offices of the family doctors free of charge. Carried.

Drs. Anderson and Cowan were requested to again interview officials of the San Joaquin Light and Power Corporation, to see if they are going to take action as promised to discontinue medical aid to families of employes free of charge, and if so when.

A communication from Dr. J. C. Drake of Kerman was read in regard to nurses of the Sun-Maid Raisin Growers practicing medicine and surgery. The president was authorized to appoint a committee, he being chairman, to take this matter up with Mr. Ralph Merritt. Drs. Anderson, C. D. Collins, T. F. Madden, J. D. Morgan, were appointed.

The secretary was instructed to get more data from the Red Cross nurse about the prescribing of medicines by an alleged doctor at one of the local drug stores.

Several matters of proposed state legislation were discussed.

The regular meeting of the Fresno County Medical Society was held March 3, at the Nurses' Home of the General Hospital. There were thirty-five members and eleven visitors present. Members—Allen, Aller, Anderson, Bell, C. D. Collins, Couey, Craycroft, H. O. Collins, Diedrich, Dahlgren, Dau, Goldberg, Hopkins, Kjaerbye, Lamkin, Larson, Manson, Mathewson, Miller, Mitchell, Hilholland, Madden, Newton, Nider, Pettis, Schottstaedt, Sheldon, Staniford, Stein, Tillman, Vanderburgh, J. R. Walker, Weddle, Wheeler, and Willson. Visitors—Shiels, McClure, Newbecker, Yocum, Tourtillott, and interns from the General Hospital.

The communication was read from Dr. J. C. Drake, and the action of the board of governors in regard to same was approved.

In regard to examination of children entering school for the first time, Madden moved, Tillman seconded, that the recommendation of the board of governors be adopted. Carried.

Dr. Madden, as chairman of the staff of the General Hospital, gave a cordial invitation to members of the profession to attend the monthly staff meetings the second Tuesday of each month.

Staniford moved, Madden seconded, that a committee of three be appointed to investigate the merits of the San Joaquin Valley Health Association, particularly the work of the Nutritional Home. Carried. Cowan, H. O. Collins, and Dau appointed.

J. Wilson Shiels of San Francisco was the speaker of the evening. He presented three interesting cases from his clinic, presenting diagnostic difficulty.

The first patient was one of fifth nerve palsy who first complained greatly of pain in the eyes. Physical examination showed all three branches involved without any other pathology anywhere in the body, except a slight irritation in the spinal fluid and blood gave strong Wassermann reactions. Under treatment he cleared up well. However, the prognosis was poor on account of the paretic gold chloride curve in the spinal fluid. He showed charts of the fifth nerve anatomy to refresh the minds of the audience on same.

The second case was one of aneurism of the anterior cerebral artery with eventual rupture and death. He said that aneurism of cranial vessels was very seldom luetic, but usually due to some other pathology in the walls of such vessels, such as arteriosclerosis, infection, etc. The symptoms in this case were very acute. He pointed out that acute brain conditions are mostly due to tumors of some kind. He showed the pathological specimen removed at necropsy.

The last case showed a very interesting and rare condition of gumma of the mediastinum. This was illustrated by radiographs of the chest during various periods of treatment, and showed the marked improvement by the use of mixed treatment by mouth and mercury rubs, without salvarsan.

A buffet luncheon was served after the meeting.

ORANGE COUNTY

Orange County Medical Society (reported by D. R. Ball, secretary)—The thirty-seventh annual banquet of the Orange County Medical Association was held at the new Ebell Clubhouse in Santa Ana the evening of January 6. The social program included vocal and instrumental selections, and music by the Santa Ana Symphony Orchestra. On the request of toastmaster, Dr. F. E. Coulter, responses were made by Rowland P. Yeagle, retiring president; Dr. H. D. Newkirk, incoming president; C. D. Ball, J. I. Clark, Mrs. J. P. Brastad, and the Reverend Walter Thornton. The officers for the new year were duly installed.

The February meeting was held at the Orange County Hospital on the 3d. The paper of the evening was read by M. L. Pindell of Santa Ana on the subject, "Some Indications for Roentgen Ray Therapy." A most instructive talk was given, and in conclusion a number of interesting roentgenograms were shown by the author.

The Santa Ana Clinical Society met at Ketner's Cafe

the evening of January 23. An interesting talk was given by Dr. H. H. Lissner of Los Angeles on "Observations on a Recent Trip to Eastern and European Clinics." Officers for the ensuing year were elected as follows: President, Bessie Stokes Martell; vice-president, Rowland P. Yeagle; secretary-treasurer, W. C. Dubois.

New members since the first of the year include J. Muncey Bulpitt and Zoe N. Bulpitt, formerly members of the Stanislaus County Society; Frank H. Paterson, transfer from the Santa Clara Society; and M. L. Pindell, transfer from the Madison County, Iowa, Society.

The society has recently lost one of its most active members, W. Leland Mitchell, County Health Officer. Dr. Mitchell came here some two years ago from the Rockefeller Foundation as the first full-time health officer in the county. During his stay he handled many difficult situations and established many needed institutions in the health department, including a very efficient laboratory with full-time workers at the County Hospital. He was recalled to New York by the parent organization the first of the year. His place has been taken by V. G. Presson, who has come here from Alabama.

SACRAMENTO COUNTY

Sacramento Society for Medical Improvement (reported by Bert L. Thomas, secretary)—The February meeting of the Sacramento Society for Medical Improvement was held at the Hotel Sacramento on the 17th. There were thirty-nine members in attendance. The minutes of the January meeting were read and approved.

Presentation of Cases—Schoff presented two patients with a most diffuse head and body distribution of trichophytosis. Both cases were of the licheniform type, and were in youngsters.

Brendel demonstrated two cases to show most satisfactory operative results. The first was of a broken back that came in paralyzed from the waist down. An immediate operation resulted in obtaining excellent function. The second was of a congenital deformity—an exceedingly motile vertebral inter-articulation—causing the patient to assume almost a crouch position. Spinal column bone-splints gave this man a most satisfactory working back.

Gundrum displayed some interesting snapshots of a patient only 18 months old who possessed a 5 cm. thyroid gland which was causing a typical exophthalmic goitre picture.

The speaker of the evening was Dr. Charles Schoff. His presentation of interesting skin cases was rendered through lantern slides. Schoff had recently returned from a number of skin clinics in the East, and the plates obtained there, together with those from his own large collection, gave to all present a most delightful skin clinic that could only have been surpassed by the presence of the patients themselves. Fay discussed the possible merits of proper surgery in early keloids. Zimmerman inquired about the types of epitheliomata amenable to surgery and x-ray. Schoff suggested that neither are used in the Skin and Cancer Hospital, but that radium is the only therapeutic agent applied here. Yates discussed a case that had come under his observation. The case was probably an actinic affair, and so would yield probably to mere covering of the parts.

Application for membership was received from Doctor Sanborn, the resident physician at Folsom prison. Dimit applications from Dr. James Thom, formerly of San Francisco, and from Dr. Richard Scribner, formerly of Hammonton, were received. Both of these applications had been acted upon by the board of directors, and thus both were declared members of the local society.

The board of directors reported that the annual banquet to be held on March 17 was being taken care of by a committee comprised of Drs. Hale, Jones, Dunlap, Schoff, and Harris. Alanson Weeks of San Francisco will present the paper of the evening. They also reported that Dr. Pottenger of Monrovia will present a paper at the April meeting.

The board appointed Drs. Parkinson and Hall as a committee to revise the by-laws in accordance with those of the state, the secretary of the State Society suggesting those of the San Francisco County as a correct model.

A letter from the state secretary, Dr. Emma W. Pope, was read to the society, calling attention to the optional medical defense offered by the State Society. Some confusion had arisen, since both the state dues and the fee for the optional defense were the same.

SAN DIEGO COUNTY

San Diego County Notes (reported by Robert Pollock)—During February the County Society presented two very interesting scientific programs. One, a clinical evening at the San Diego County General Hospital, with a program of unusual excellence furnished by members of the visiting and house staffs. The other meeting, a dinner session at the Cabrillo Restaurant, was addressed by Dr. Clarence G. Toland of Los Angeles, who gave a comprehensive and practical paper on surgery of the upper abdomen. Beginning his talk with a review of the nerve supply to the structures in this area, he constantly kept this before his audience in discussing symptoms and diagnosis. His talk was entertainingly illustrated by Dr. K. S. Davis, roentgenologist of St. Vincent's Hospital, Los Angeles, who showed a large series of x-ray plates illustrating various upper abdominal conditions. Discussion on the paper was opened by H. C. Oatman of San Diego and A. B. Smith, roentgenologist of the Scripps Memorial Hospital, La Jolla, after which the paper enjoyed a rather liberal general discussion by members of the society.

The society has accepted an invitation from Commander Owen of the Hospital Ship Relief to spend the evening of Saturday, March 14, on board ship, at which time an interesting scientific program will be presented by medical officers of the navy.

The recently elected officers of the medical staff of the San Diego County General Hospital are Clarence E. Rees, chairman; Louis Strahlmann, vice-chairman; and C. L. Stealy, secretary.

Things look promising for breaking ground during March for San Diego's first physicians' building, pictures of which, the so-called "Medical Arts Building," show a beautiful ten-story structure, admirably adapted for its purposes—that of housing exclusively physicians, dentists, and their necessary aids. This building will be placed at the corner of Eleventh and C streets, directly in line with the natural growth of the business district, and yet, for the time, slightly beyond the greatest traffic congestion.

SAN FRANCISCO COUNTY

St. Joseph's to Rebuild—Staff to Discuss Medical Economics—March 12 St. Joseph's Hospital staff and patronesses, San Francisco, met at dinner, offered by the Sisters, and advanced the drive for $500,000 in April for the fire-proof reconstruction of the main buildings. Dr. A. S. Musante, head of the staff, represented the latter, and Mrs. W. T. Cummins was invited as president of the patronesses. Attorney Hugo Newhouse, leader in legal and financial circles, as the general chairman of the campaign committee, was the principal speaker. He spoke of the thirty-six years of service of the Sisters of St Joseph's, which had always the lowest rates in the city, enabling self-reliant patients to pay their way through the wards for $17.50 per week. The highest standing in standardization had been received from the American College of Surgeons, and the American Medical Association had endorsed the hospital for intern or fifth year for medical graduates. The school of nursing was accredited by the California State Board of Health. Mr. Newhouse reported upon two meetings held the previous Monday—one a luncheon of bankers and financial men, and the other a dinner of the heads of the different religious fraternities—and another to be held at the Palace Hotel the following Wednesday, composed of 300 of the prominent civic representatives. Archbishop Edward J. Hanna, honorary chairman, made stirring appeals at these gatherings and has entered actively into the drive.

At the crowded staff meeting on "Medical Economics," after the supper Attorney J. F. Denman spoke on "Principles in Handling Patients' Accounts." He distributed a page form with single-line entries of charges, receipts, date, name and address of patient and person responsible, service, and remarks, and another for a loose ledger page for posting each patient's financial data. Carelessness in necessary details concerning debtor, proper fees, sending bills, following up "skips" and referring to collector were exemplified. Legal claims against estates must be filed

within four months after death. A simple income tax sheet was also distributed. Doctors were urged to have their accounts attended to by others if they cannot give them the proper attention.

Percy A. Wood of the Wells Fargo Bank discussed "Fundamentals of Investments for Doctors," saying:

"Safety, marketability and rate of interest are the three factors in investments, and it is impossible to find all rank high in any one of them. For example, bonds of the United States Government have the greatest safety and marketability, as they can be sold any time without delay, but the rate of interest is less than a savings bank pays. Doctors cannot study the investment field, as few have the knowledge, time and means to do it right, and an investment banker must be consulted. He recommends after a critical study the use of his organization, expert staff, and financial resources. His feeling of responsibility continues till the bond (principal and interest) is paid. I suggest that you diversify your holdings, i. e., distribute your risks as much as possible so that they will be subject to different principles of fluctuation and the losses of one will be neutralized by the gains of another. Each investment should be a separate risk and independent of the forces influencing the hazard of any other investment you may have."

Irving H. Frank, manager of the hospital bond division of the National Surety Company, presented a paper on "Insurance—the Economics of Misfortune," abstracted as follows:

"Ancient Greeks started insurance by advancing money on ships, which was to be repaid with interest if the voyage was successful. Belgium, in the fourteenth century, had the first insurance with direct charge of premium. Insurances have improved and now, by paying a specified sum to a company, one can be insured against almost every possible loss. Large investments of companies tend towards better living conditions, which aid the individual. The latest form of insurance is the Hospital Bond, which up to the amount of coverage purchased, pays for bed and board, use of operating-room, anesthetic, x-ray and laboratory treatments, medicines, and ambulance in any hospital in the United States and Canada. CALIFORNIA AND WESTERN MEDICINE endorses it as protection for the patient and beneficial to the hospital and physician, as hospital expense is a big item in illness."

C. A. Mariani, manager of the Professional Men's Clerical Bureau, discoursed on "The Doctor as a Better Business Man," summarized below:

"The doctor as a business man is a failure, as attention to his profession makes it impossible for him to attend to his accounts properly. A competent aid is necessary. A doctor should have a plan for getting certain information when with the patient which can be used by his accountant. He must make with every call a record of the name, address, phone, and occupation of person to whom to charge the account; then the patient's name and address, reference and address, and get a copy of the hospital record of patients treated there, the name of a doctor calling him for a consultation or assistance in operation, as well as the history, and record the proper charge at the time of the service. He should make receipts in duplicate for payments and note how patients will pay. Collections must be requested on the same day monthly, and enforced after 120 days."

Drs. I. Gobar, Walter Smith, and H. Deering suggested a black list for dead-beats and prevention of imposition.

Southern Pacific General Hospital (reported by W. T. Cummins, secretary)—The regular monthly clinical meeting was held at the Southern Pacific General Hospital, Huntington Hall, on Wednesday, March 4, at 8:30 p. m.

L. B. Crow presented a paper on "Pulmonary Infarcts," in which he stated that this is a relatively common lung complication, and that it is frequently overlooked by the internist. As a sequel of major operations, it is much more frequently present than has been suspected, for it has been mistaken for pleurisy and pneumonia. Pulmonary congestion caused by any pathological condition favoring a slowing of the blood stream from the right ventricle favors infarction.

It is quite essential to correlate carefully the clinical and roentgen findings in every post-operative lung complication, so that a correct diagnosis may be made. All patients that show any pulmonary congestion following major operations should be kept in bed and closely watched for a longer period of time than is customary, so as to avoid, if possible, any embolic complications. The paper was illustrated with numerous roentgen pictures, one series showing progressive resolution in an infarct.

J. H. O'Connor gave a roentgen-illustrated talk on "Closed Reduction of Comminuted Fractures." The technique, as applied to fractures of the lower extremity, is as follows:

A plaster cast is applied to the foot a few days before attempted reduction. The foot is well padded with sheet wadding, and over this a layer of thick felt is applied. In the cast there is incorporated part of a muslin bandage, leaving a loop to project from the sole of the foot. Reduction is effected under anesthesia, the pelvis being fixed by a skein of woolen yarn passing around the upper part of thigh of affected side and fixed by a hook in the wall back of the patient. Extension is made by a windlass in the wall at the foot of the patient. The wire from this is hooked to the protruding muslin loop incorporated in the cast so that proper traction may be maintained until the cast is sufficiently hardened. As a matter of safety the cast is then split down the center, for this will maintain the reduction as well as an unsplit one, and pressure sores will then be eliminated.

W. T. Cummins reviewed 274 of the General Hospital autopsies, and illustrated with charts 498 clinical and pathological conditions. A number of interesting cases were cited, such as ruptured aneurysms, dyspituitarism, dextrocardia, pulmonary abscesses, odiococcidioidal disease, etc. He emphasized the importance of the intern's position in getting permission for autopsies, and regretted the lamentable apathy of many clinicians towards autopsies. He believes that there should be better co-operation of the clinician and the laboratory and, aside from the subject in hand, that the clinician should know a little more about the details of laboratory technique and preparation therefor, as exemplified in occult blood, examinations of stools and basal metabolism determinations.

Franklin Hospital Clinical Society (reported by Ewald H. Angerman, secretary)—The regular staff meeting of the Franklin Hospital Clinical Society was held March 2 at the hospital, Frank R. Dray presiding.

The paper of the evening was ably presented by William W. Washburn before a large audience. A resume of his talk follows:

This paper covered many of the more practical aspects of goiter surgery. A few minutes were taken during the early part of the reading of the paper to show slides from microscopic sections, illustrating clearly the various types of thyroid disease, giving one a definite pathological classification upon which the paper was based.

While it may be admitted that exophthalmic goiter or Basedow's disease is a self-limiting disease, one cannot predict the degree of toxicity which any given case may exhibit. Statistics based upon mortality rates from any line of treatment do not tell the whole truth, for the morbidity should be seriously considered in cases treated over a long period of time by medical measures.

A type history was read, illustrative of a case of Basedow's disease of moderate severity. The significance of various signs and symptoms were discussed, particularly laboratory data. Emphasis was laid upon the necessity of a careful consideration of these clinical signs and symptoms in weighing the degree of toxicity in a given patient. The basal metabolic rate, particularly when a single reading is taken, should be accepted only in a relative sense. When taken *in conjunction with other factors* the basal metabolic rate is an index of the intensity of the disease in all types of hyperthyroidism and is of great aid in selecting the best time for operation and the best type of surgical procedure. Exophthalmic goiters run a higher average basal metabolic rate than do toxic adenomas, yet a case of 60 plus may be a better surgical risk than one of exophthalmic goiter with a 30 plus rate, because of the greater likelihood of cardiovascular changes in the former type case. Hyperthyroidism from toxic adenoma should be carefully differentiated from that of Basedow's disease. Exophthalmos and a bruit over the gland is not gotten with adenomas unless there be an associated hyperplasia. All adenomas becoming toxic or giving pressure symptoms should be removed. Adenomas in patients over 40

years of age become malignant in over 2 per cent of cases. The importance of a pre-operative laryngoscopic examination in all adenomatous conditions was emphasized.

The full Kocher collar incision should be used, as it allows an exploration of the entire gland. Lugol's solution, as well as preliminary arterial ligations, is of great aid in preparing exophthalmic goiter patients for operation.

Improvement in method or means of preparing patients for thyroidectomy has resulted in a marked lowering of operative mortality rate.

A large number of lantern slides were shown at the conclusion of the paper.

Discussion by Falconer, Yoell, Bruck, Cook, Newall, Weil, Day, Taylor, and Quinn.

SAN MATEO COUNTY

San Mateo County Medical Society (reported by Dr. Callaway, secretary)—The regular monthly meeting of the San Mateo County Medical Society was held February 18 at the Community Hospital, in conjunction with the commission of the Community Hospital. This was the first annual meeting of the society with the hospital, and at this meeting a report of the commission was rendered showing the activities of the hospital during the past year. Talks were given by the Rev. Father Ramm on the commission form of government of county hospitals. Dr. W. P. Lucas of the University of California Hospital talked on hospital organization.

San Mateo County is indeed fortunate to have this new and beautifully equipped institution for the care of county patients, as well as full-pay and part-pay patients. The medical society of the county is supporting the institution with their services, and it has been a great means of cementing the society into an active organization.

Since the reorganization of the county society in June of 1923, we have met each month, except one, and at each meeting interesting cases have been presented by members of the society, or interesting talks have been given to us by physicians from San Francisco. It is indeed gratifying to see the interest that is now being shown in the society, and I trust that it will continue.

SANTA BARBARA COUNTY

Santa Barbara County Medical Society (reported by Alex C. Soper, Jr., secretary)—A joint meeting of the County Medical and Dental Societies was held at the University Club, succeeding a dinner there, at which fifty-two members and guests participated, the occasion being the presence of Dr. Henry S. Pritchett, president of the Carnegie Foundation, and Dr. F. V. Simonton, head of the Dental Research Laboratory at the University of California.

The meeting began at 8:45 p. m., Franklin Nuzum, president of the County Medical Society, in the chair. The following resolution was read by the secretary, and on motion duly passed, with an order that copies be sent to the daily press, the Carnegie Foundation, and the state association:

"WHEREAS, Over a period of years the medical and dental professions have viewed with increasing respect the constructive and progressive activity of the Carnegie Corporation and the Carnegie Foundation for the Advancement of Teaching, and

"WHEREAS, Of the executives concerned in this distinguished service, Dr. Henry S. Pritchett has always been outstanding, be it

"RESOLVED, That the Medical Society and the Dental Society of Santa Barbara County at this joint meeting record herewith their recognition of, and sympathy with, these services, and express to the Carnegie Corporation, the Carnegie Foundation for the Advancement of Teaching, and Dr. Henry S. Pritchett, their respect and appreciation."

Henry C. Bagby, M. D., D. D. S., introduced with some facetious remarks Dr. Simonton, who described at length the research work done at the University Dental Laboratories, with especial reference to pyorrhea and the hope of speedy solution of the problem.

Franklin R. Nuzum introduced Dr. Pritchett, who spoke upon the similar interests of the medical and dental professions and the advisability of their greater co-operation and unity; compared the care of the diseases of the mouth with the care of those of the eye, nose, throat, etc., as specialties.

SANTA CLARA COUNTY

Santa Clara County Society (reported by Alson A. Shufelt, secretary)—The last regular meeting of the year for the Santa Clara County Medical Society was held December 17, 1924. Dudley Fagerstrom, E. L. Cottrell, C. H. Arnold, were elected to membership, and the resignation of C. E. Wintermute was accepted. The election of officers was then taken up, and the following elected for 1925: President, Doxey Wilson; first vice-president, J. B. Bullitt; second vice-president, Jonas Clark; third vice-president, J. H. Kirk; secretary, Alson Shufelt; assistant secretary, E. A. Turco; treasurer, B. E. Loehr. Councilors-at-large: F. S. Ryan, E. P. Cook, A. E. Fillipello. Delegates: J. H. Shepherd, D. A. Beattie. Alternates: C. E. Saunders, G. A. Barry.

The first meeting of 1925 was held January 21 at the Santa Clara County Hospital, with an attendance of forty members. After a short business meeting in which three new applications for membership were presented, and a few minor matters disposed of, the main program of the evening was presented. This was made up of demonstrations of clinical cases by the hospital staff. Clarke Saunders showed a case of a young man who was regaining his vision after total blindness from a luetic keratitis, discussing briefly the treatment and prognosis. Clement Arnold followed with two interesting neurological cases—one a post-influenza encephalitis of the typical Parkinsonian type; the other a spastic paraplegia in a young adult that had been present since birth with accompanying mental deterioration, and in which there was a question of differential diagnosis. Next, a case of lung abscess was discussed by George Gray, and a case of bronchiectasis in which pneumo-thorax had been tried without result, was shown by Louis Boonshaft. A report of the activities of the year at the County Hospital was then read by Dr. Doxey R. Wilson, after which he presented an unusual case of an ovarian tumor. This patient had known of its presence for many years, but had only recently applied for treatment. Eight gallons of fluid had been aspirated within a short time, but the tumor mass still present seemed to weigh more than the patient herself. (This was later proven true.) Henry Dahleen showed a case of ureteral stone with resultant kidney destruction. Demonstration of unusual pathological specimens by Dr. Proescher concluded the scientific part of the meeting. Refreshments were then served, and the meeting adjourned. It was an excellent program, and members not present really missed an opportunity.

The regular February meeting of the Santa Clara County Medical Society was held at the Commercial Club rooms on February 18, it being the annual dinner meeting. Over fifty members were present to enjoy an excellent dinner and a good program. Scientific subjects were more or less banned for the evening, and the time spent in friendly discussions and in a renewal of old relationships. It was pleasing to see several members from towns other than San Jose, and we only regret that there might not have been more. The speaker of the evening, J. Wilson Shiels of San Francisco, was presented by Doxey R. Wilson, and in his inimitable way delighted his audience with his humor, and with his reminiscences of the old-time practitioner and the "good old family doctor," whose passing he deeply regretted.

Before the meeting adjourned, it was entertained by a half-hour of magic by a deaf and dumb artist of rare talent.

SONOMA COUNTY

Sonoma County Medical Society (reported by G. A. Hunt, secretary)—The Sonoma County Medical Society met in Santa Rosa, March 12. Twenty-five members were present.

Samuel H. Hurwitz of San Francisco gave an excellent address on "The Treatment of Asthma."

A myxedema patient was presented by Doctors Cline and Bonar of Santa Rosa.

The establishment of a professional credit bureau in

connection with the Luce Adjustment Agency of Santa Rosa was discussed and voted on. The majority decided in favor of a credit bureau. From this bureau the professional credit standing of many patients that apply for treatment can be obtained.

VENTURA COUNTY

Ventura County Medical Society (reported by C. F. Schultz, secretary)—At a meeting of the County Medical Society on January 19 the annual election took place. The 1924 officers were elected for another year; also the delegates and alternates to the state meeting.

Santa Paula's members had been present at all of the 1924 meetings, namely, Blaisdell, Merrill, and Schultz, and only one other member had a clean record, Bianchi of Ventura.

At the February meeting at Ventura, Verne Mason of Los Angeles presented a paper on abdominal tumors which proved very interesting.

The society anticipates a renewed interest in its meetings and programs for this year. The next meeting will be held at the Ventura Country Club on March 3.

YOLO COUNTY

Yolo County Medical Society (reported by John D. Lawson, secretary)—A meeting of the Yolo County Medical Society was held on March 3 at the Woodland Clinic building. There were present, T. C. Cooper, W. E. Bates, W. J. Blevins, C. H. Fairchild, F. R. Fairchild, J. E. Harbinson, E. E. Larson, H. D. Lawhead, W. J. Spencer, L. P. Bell, J. D. Lawson. Visitors—H. M. Elberg, D. D. S., Shaffer, D. D. S., Pertins, D. D. S., and twenty members of the professional staff of Woodland Clinic.

E. Eric Larson of the Woodland Clinic spoke on "Ethylene Anesthesia"; L. P. Bell on "Regional Anesthesia"; and H. M. Elberg, D. D. S., on "Conduction Anesthesia."

E. Eric Larson of the Woodland Clinic surgical staff, a graduate of Rush Medical College, 1920, and Walter J. Spencer were elected to membership.

Walter J. Spencer has been added to the staff of the Woodland Clinic, assuming the chair of Pediatrics. Doctor Spencer is a graduate of Rush Medical College, 1916. He served in the navy during the war, since which time he has extensively studied children's diseases in various American clinics.

Since the last report the Woodland Clinic has had two talks open to the public at their regular monthly educational meetings. In January, L. P. Bell presented "Goiter" in a popular way. In February, E. Eric Larson gave a talk on "Indigestion." In March, W. J. Spencer spoke on "Preventable Diseases of Childhood." All of these presentations are made in lay language and are purely educational. The chief purpose is to instil into the minds of the layman the necessity of treatment by competent physicians and the utter lack of competence of the various "pathies."

CHANGES IN MEMBERSHIP

New Members—Robert K. Cutter, Eugene S. Maxson, Berkeley; Fred Ewing, H. O. Ellis, Szabo Kalman, John A. Dougherty, Charles E. Marquis, Oakland; Donald V. Burke, John J. Lalor Doyle, Chico; C. B. Cowan, Selma; Roland W. Dahlgren, Neil J. Dau, Gerald K. Nider, Fresno; C. S. Ambrose, F. L. Courley, John R. Brown, Herman Lando, Joseph N. Kolisch, Benjamin F. Hoyt, B. G. DuPre, Cecil Sutherlin, W. Q. Harper, Fred Lindenberger, A. M. Hansen, Conrad I. Hubert, John Frederick Clark, Carl C. Cowin, Lars A. Dahl, John H. Hooval, Raymond W. Huntsberger, Wilma H. Jacobs, Mary L. Neff, Frances I. Richman, Ernest H. Ruediger, A. A. McClurkin, Los Angeles; George Wells, Bell; Guy L. Bliss, Long Beach; Fred L. Horton, Pomona; John L. Steffy, Santa Monica; Dean M. Walker, Sherman; George I. Dawson, Napa; J. Hudson Sale, Ernest K. Stratton, Sigurd von Christierson, F. H. Redewill, Dorothy W. Atkinson, Elizabeth A. Davis, Curtis E. Smith, Henry L. Wagner, San Francisco; H. L. Mawdsley, Frank Gehrels, San Mateo; William H. Murphy, Redwood City; Joseph D. Lewis, Santa Barbara; E. H. Eiskamp, Watsonville.

Transferred—Norman C. Paine, from Tulare County to Los Angeles County; Horace A. Hall, from Riverside County to Los Angeles County; Frederick P. Shafer, from San Francisco County to Siskiyou County; Gwendolyn Stewart, from San Francisco County to Los Angeles County.

Resigned—Joseph Fife, Victor Randolph, Anna K. Davenport, San Francisco; Henry D. Rinehart, Herbert C. Jones, Pasadena; Robert E. Merritt, Leon W. Mansur, Frances C. Turley, Los Angeles; Robert C. Nichols, Ontario.

Retired—George Adam, San Francisco.

Honorary Members—A. Liliencrantz, Oakland; R. C. Shawhan, Soldiers' Home, Sawtelle; J. H. Utley, James S. Calder, Los Angeles; George B. Kalb, Monrovia.

Deaths—Cook, Francis Steven. Died at Hollywood, February 28, 1925, age 60. Graduate of the University of California Medical School, San Francisco, 1887. Licensed in California in 1888. Doctor Cook was a member of the Contra Costa County Medical Society, the California Medical Association, and the American Medical Association.

Eddy, George Sigel. Died at Los Angeles, March 8, 1925, age 63. Graduate of the University of Illinois College of Medicine, Chicago, 1896. Licensed in California in 1897. Doctor Eddy was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Gourley, Frederick Lantz. Died at Los Angeles February 10, 1925, age 48. Graduate of the University of Illinois College of Medicine, Chicago, 1903. Licensed in California in 1920. Doctor Gourley was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Mitchell, William Leland. Died at Santa Ana, February, 1925. Graduate of the Washington University Medical School, St. Louis, Mo., 1918. Licensed in California in 1923. Doctor Mitchell was a member of the Orange County Medical Society, the California Medical Association, and the American Medical Association.

The Price—Winning a prize from life is like gathering a crop from the garden. Unless we dig deep, putting our backs into the job, unless we feed the soil, and sow and water, weed and cultivate, rise early and stay out late to guard what we planted, unless we ache with the labor of its growing, we never harvest the crop of our dreams. We have not paid in full.—Angelo Patri.

STIMULANTS, DEPRESSANTS, HUMOR

"I do appreciate very much your interest in my article. This labor on your part must be the cause of the excellence of your journal. In changing the paper along the lines of your suggestion, I have also shortened it several pages."—Los Angeles.

In Three Generations

Teacher—Jimmie, define and give an example of heredity.

Jimmie—It means that—that—that if your grandfather didn't have no children your father wouldn't have none neither—and neither would you.

Jakie—Ikey, you should put the curtains down when you kiss your wife; I saw you last night.

Ikey—The chokes on you, Jackie; I wasn't home last night.

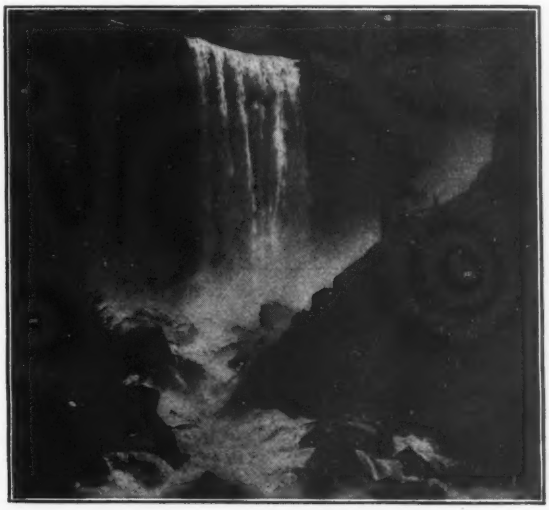
There Are Pioneers, Plodders, and Parasites

Pioneers make the venture and the conquest. Plodders consolidate and hold what has been gained. Parasites follow to live off others' labors. Each fulfills a purpose, even the parasite. He is pretty low down in the scale, like the maggot, but his presence is an advertisement that something exists on which he can live. It is likewise a warning that that "something," whatever it may be, should be eliminated.

Now that the glands are the fashion as a panacea for every ill or want, why not give the sweat glands a good tryout and see what happens?—San Diego Union.

PROGRAM

THE FIFTY-FOURTH ANNUAL SESSION OF THE CALIFORNIA MEDICAL ASSOCIATION TO BE HELD AT YOSEMITE NATIONAL PARK, CALIFORNIA, MAY 18, 19, 20, 21, 1925



OFFICERS AND COMMITTEES, 1925

Granville MacGowan, Los Angeles, President.
Edward N. Ewer, Oakland, President-Elect.
Harry E. Alderson, San Francisco, Vice-President.
Emma W. Pope, San Francisco, Secretary.
W. E. Musgrave, San Francisco, Editor.
Hartley F. Peart, San Francisco, General Counsel.
Hubert T. Morrow, Los Angeles, Assistant General Counsel.
William H. Barry, Superintendent of Publications.

COUNCILORS

First District—Lyell C. Kinney, San Diego (1927)—San Diego, Riverside, Orange, San Bernardino, and Imperial Counties.

Second District—William H. Kiger, Los Angeles (1925)—Los Angeles, Santa Barbara, Ventura, and Kern Counties.

Third District—T. C. Edwards, Salinas (1926)—San Luis Obispo and Monterey Counties.

Fourth District—Fred R. DeLappe, Modesto (1925)—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera, Tulare, and Stanislaus Counties.

Fifth District—David A. Beattie, San Jose (1926)—Santa Clara, San Mateo, San Benito, and Santa Cruz Counties.

Sixth District—Walter B. Coffey, San Francisco (1926)—San Francisco County.

Seventh District—Dudley A. Smith, Oakland (1926)—Alameda, Contra Costa, San Joaquin, and Calaveras Counties.

Eighth District—James H. Parkinson, chairman, Sacramento (1925)—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc, and Siskiyou Counties.

Ninth District—James H. McLeod, Santa Rosa (1926)—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt, and Trinity Counties.

Councilors-at-Large—O. D. Hamlin, Oakland (1925); Rene Bine, San Francisco (1926); George H. Kress, Los Angeles (1926); William T. McArthur, Los Angeles (1926); Morton R. Gibbons, San Francisco (1927); C. L. Curtiss, Redlands (1926).

DELEGATES AND ALTERNATES TO A. M. A.

Delegates—Victor G. Vecki, San Francisco (1926); Hans Lisser, San Francisco (1926); Albert Soiland, Los Angeles (1927); Robert V. Day, Los Angeles (1927); Lemuel P. Adams, Oakland (1927).

Alternates—C. Van Zwalenburg, Riverside (1926); William E. Stevens, San Francisco (1926); Charles D. Lockwood, Pasadena (1927); Robert Pollock, San Diego (1927); O. D. Hamlin, Oakland (1927).

COMMITTEES

Committee on Scientific Program—Emma W. Pope, chairman; Lemuel P. Adams, Oakland (1926); F. M. Pottenger, Monrovia (1927); Joseph Catton, San Francisco (1928); Walter V. Brem, Los Angeles (1925).

Committee on Arrangements—James H. Parkinson, chairman; Rene Bine, T. C. Edwards, Clinton D. Collins, Joseph K. Smith.

Executive Committee—Rene Bine, chairman; Granville MacGowan, Edward N. Ewer, Harry E. Alderson, James H. Parkinson, Emma W. Pope, W. E. Musgrave, Hartley F. Peart.

Auditing Committee—Rene Bine, chairman; Morton R. Gibbons.

Committee on Bunnell Memorial—Emmet Rixford, chairman; Saxton T. Pope, Egerton Crispin.

Publicity for 1925 State Meeting—Celestine J. Sullivan.

GENERAL HEADQUARTERS AND MEETING HALLS

Diagrammatic map, showing location of various offices and meeting halls, will be distributed at Registration and Information desks. See also diagram, page 472.

(A) Secretary's office—Council Room, Lodge.
(B) Registration Bureau—Lodge Registration Office.
(C) Information offices—Lodge Registration Office; Sentinel Hotel Lobby in Village; Lobby at Camp Curry.
(D) Consolidated Ticket office—Transportation office at Lodge.
(E) Publicity Committee—Advertising room in Village.
(F) Council Room—Lodge.

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1. Tent, seats 800, located in Lodge.
2. Government Pavilion, seats 400, located in Village.
3. Pillsbury Pavilion, seats 300, located on Lodge side.
4. Dining room, Sentinel Hotel, seats 150, located in Village.
5. Antler's Club, seats 75, located back of church in Village.
6. Sentinel Lobby, seats 100, located in Village.
7. Pillsbury Studio, seats 100, located in Village.

(Letters and figures refer to locations shown on the map.)

DIAGRAM OF MEETINGS

(Ih case of inclement weather, General Sessions will be held in Government Pavilion, Village)

		Tent	Government Pavilion	Pillsbury Pavilion	Sentinel Dining Room	Antler's Club	Sentinel Lobby	Pillsbury Studio	
Sunday May 17	8-10								Council
Monday May 18	10-12:30	General Sessions							
	2-4:30	Industrial Medicine	General Medicine	Obstetrics	Neuropsy-chiatry	Derma-tology	Pathology	Anesthe-siology	Council
	8-10	House of Delegates	General Surgery	Pediatrics	Eye Ear, Nose and Throat	Urology	Radiology		
Tuesday May 19	10-12	BUNNELL	MEMORIAL	EXERCISES	AT FOOT	OF EL	CAPITAN		
	12	Secretaries'	Luncheon	at Sentinel	Dining Porch,	Yosemite	Village		
	2-4:30		General Surgery	Pediatrics and Obstetrics	Eye Ear, Nose and Throat	Urology	Radiology	Anesthe-siology	Council
	8-10	Industrial Medicine	General Medicine	Med. Soc. (Optional De-fense Group)	Neuropsy-chiatry	Derma-tology	Pathology	Tech. Spec. Physio-therapists	
Wednes-day May 20	10-12:30	League				Derma-tology			
	2-4:30		General Surgery	Pediatrics	Eye Ear, Nose and Throat	Urology	Radiology	Anesthe-siology	Council
	8-10	House of Delegates				Western Urological Society	Pathology	Tech. Spec. Med. Social Workers	
Thursday May 21	10-12:30	General Sessions							
	2-4:30	Industrial Medicine	General Medicine	Obstetrics	Neuropsy-chiatry				Council

GENERAL OUTLINE OF THE MEETINGS

There will be three sessions on Monday, Tuesday and Wednesday, and two sessions on Thursday.

Uniform hours for all meetings are provided for 10 a. m. to 12:30 p. m.; 2 to 4:30 p. m., and 8 to 10 p. m.

The time of each meeting is shown in the diagram.

General Sessions—Two general sessions open to members and guests will be held on Monday and Thursday mornings.

Bunnell Memorial—The unveiling of the plaque to Doctor Lafayette Houghton Bunnell at the foot of El Capitan with appropriate ceremonies will be held on Tuesday morning. Automobiles leave the Lodge Porch at 10 a. m.

Section on Medical Economics, Education, Public Health and Hospitals—This meeting is held under the auspices of the League for the Conservation of Public Health on Wednesday morning.

The Medical Society of the State of California (Optional Defense Group)—All members of the California Medical Association and guests are invited to attend this meeting, which will be held Tuesday evening.

The following sections will hold meetings:

Anesthesiology.
Dermatology and Syphilology.
Eye, Ear, Nose and Throat.
General Medicine.
General Surgery.
Industrial Medicine and Surgery.
Neuropsychiatry.
Obstetrics and Gynecology.
Pathology and Bacteriology.
Pediatrics.
Radiology, Roentgenology and Radium Therapy.
Technical Specialties.
Urology.

Council Meetings

First Meeting—Sunday, May 17, at 8 p. m.
Second Meeting—Monday, May 18, at 2 p. m.
Third Meeting—Tuesday, May 19, at 2 p. m.
Fourth Meeting—Wednesday, May 20, at 2 p. m.
Fifth Meeting—Thursday, May 21, at 2 p. m.

Meetings of the Council With the Presidents and Secretaries of Constituent Societies

All members of the Council and all presidents and secretaries and assistant secretaries of constituent societies are requested to be present at a luncheon to be held in the Porch Dining Room of the Sentinel Hotel, Yosemite Village, on Tuesday, May 19, at noon.

HOUSE OF DELEGATES

Membership

Councilors—First District, Lyell C. Kinney (1927); Second District, William H. Kiger (1925); Third District, T. C. Edwards (1926); Fourth District, Fred R. DeLappe (1925); Fifth District, David A. Beattie (1926); Sixth District, W. B. Coffey (1926); Seventh District, Dudley A. Smith (1926); Eighth District, James H. Parkinson (1925); Ninth District, James H. McLeod (1926).

Councilors-at-Large—O. D. Hamlin (1925), Rene Bine (1926), George H. Kress (1926), William T. McArthur (1926), Morton R. Gibbons (1927), C. L. Curtiss (1926).

Ex-Officio—President Granville MacGowan, President-Elect Edward N. Ewer, Vice-President Harry E. Alderson.

DELEGATES	ALTERNATES
Alameda County (6)	
W. S. Kuder	F. H. Bowles
Chas. L. McVey	W. L. Channell
A. M. Meads	C. A. De Puy
Gertrude Moore	Henning Koford
Pauline S. Nusbaumer	R. T. Legge
George Rothganger	A. H. Rowe
Butte County (1)	
Edward E. Baumeister	
Contra Costa County (1)	
U. S. Abbott	Marguerite Deininger-Keser
Fresno County (2)	
T. F. Madden	R. B. Tupper
H. J. Craycroft	Burt B. Lamkin
Glenn County (1)	
W. H. Walker	Etta S. Lund
Humboldt County (1)	
O. R. Myers	John N. Chain
Imperial County (1)	
Eugene Le Baron	F. F. Malone

Kern County (1)

F. A. Hamlin — F. J. Gundry

Lassen-Plumas County (1)

Los Angeles County (27)

John V. Barrow — E. G. Butt
Michael Creamer — George L. Cole
Robert V. Day — A. S. Granger
George Dock — R. B. Hill
William Duffield — J. B. Luckie
Joseph M. King — S. R. Monaco
Carl H. Parker — F. L. Rogers
R. E. Ramsey — H. H. Sherk
Harlan Shoemaker — O. R. Stafford
Albert Soiland — F. C. Swearingen
Willard J. Stone — R. A. Terry
C. G. Toland — H. P. Wilson
John D. Gillis — Homer S. Wilson
George Piness — L. S. Welbourn
Elmer E. Kelly — A. E. W. Yale
John G. Mackey — David Thomson
Percy T. Magan — E. D. Ward
V. R. Mason — W. H. Gilbert
A. W. Moore — Eleanor C. Seymour
A. T. Newcomb — Olga M. McNelle
Scott D. Gleeten — Philip H. Stephens
James F. Percy — Thomas W. Moffitt
Leroy B. Sherry — Joseph K. Swindt
C. P. Thomas — Foster K. Collins
E. C. Moore — Russell Sands
E. O. Palmer — G. A. Laubersheimer
W. B. Bowman — C W. Cook

Marin County (1)

R. G. Dufficy — C. A. De Lancey

Mendocino County (1)

Harper Peddicord — L. K. Van Allen

Merced County (1)

W. C. Cotton — C. H. Church

Monterey County (1)

Edwin Wiley Reeves — W. H. Bingaman

Napa County (1)

D. H. Murray — W. O. Moore

Orange County (1)

Harry E. Zaiser — R. A. Cushman

Placer County (1)

F. E. McCullough — H. M. Kanner

Riverside County (1)

R. A. Card — Will H. Holmes

Sacramento County (2)

G. N. Drysdale — C. B. Jones
A. K. Dunlap — N. G. Hale

San Benito County (1)

E. E. McKay

San Bernardino County (2)

R. S. Gibbs — P. M. Savage
E. J. Eytinge — A. T. Gage

San Diego County (3)

Martha Welpton — Lillian Mahan
Thos. O. Burger — M. C. Harding
Robert Pollock — L. H. Redelings

San Francisco County (16)

W. C. Alvarez — Orrin S. Cook
Edmund Butler — L. A. Emge
Joseph Catton — C. F. Gelston
W. E. Chamberlain — Edward F. Glaser
W. R. P. Clark — Thos. H. Kelly
E. C. Fleischner — A. S. Musante
M. R. Gibbons — R. R. Newell
J. H. Graves — P. H. Pierson
Sol Hyman — Chas. B. Pinkham
W. J. Kerr — R. L. Richards
A. R. Kilgore — F. H. Rodenbaugh
E. S. Kilgore — K. L. Schaupp
A. C. Reed — John A. Sperry
H. A. L. Ryfkogel — Harry Spiro
Wm. E. Stevens — J. F. Sullivan
V. G. Vecki — Wm. C. Voorsanger

San Joaquin County (2)

Fred J. Conzelmann — Barton J. Powell
R. T. McGurk — N. B. Gould

San Luis Obispo County (1)

Roy M. Cox — Gifford L. Sobey

San Mateo County (1)

W. C. Chidester — W. O. Callaway

Santa Barbara County (1)

Henry J. Ullmann — William J. Mellinger

Santa Clara County (2)

J. H. Shephard — C. E. Saunders
D. A. Beattie — G. L. Barry

Santa Cruz County (1)

H. G. Watters — P. T. Phillips

Shasta County (1)

Sherman T. White — Clarence E. Reed

Siskiyou County (1)

E. W. Bathurst

Solano County (1)

Sonoma County (1)

A. A. Thurlow — M. J. Fulmer

Stanislaus County (1)

R. E. Maxwell — C. E. Pearson

Tehama County (1)

Tulare County (1)

Roy N. Fuller — Austin Miller

Tuolumne County (1)

Homer DeWitt Rose — Wm. L. Hood

Ventura County (1)

Benjamin E. Merrill — Harold B. Osborn

Yolo County (1)

Fred R. Fairchild — W. E. Bates

Yuba-Sutter County (1)

E. E. Gray

FIRST MEETING OF HOUSE OF DELEGATES

Tent, Lodge, Monday, May 18, at 8 p. m.

Order of Business

1. Calling to Order.
2. Roll Call.
3. Report of President.
4. Appointment of the Reference Committee by the President.
5. Report of the Council, James H. Parkinson, chairman (presented before the General Sessions).
6. Report of the Committee on Scientific Program, Emma W. Pope, chairman.
7. Report of the Auditing Committee, Rene Bine, chairman.
8. Report of Committee on Bunnell Memorial, Emmet Rixford, chairman.
9. Report of Secretary, Emma W. Pope.
10. Report of Editor, W. E. Musgrave (presented before General Sessions).
11. Unfinished Business.
12. New Business.
13. Reading and Adoption of Minutes.
    Adjournment.

SECOND MEETING OF HOUSE OF DELEGATES

Tent, Lodge, Wednesday, May 20, at 8 p. m.

Order of Business

1. Calling to Order.
2. Roll Call.
3. Announcement of the Place of Meeting, 1926.
4. Election of Officers:
   (a) Election of President-Elect.
   (b) Election of Vice-President.
   (c) Election of Councilors.

   Second District—Incumbent, William H. Kiger, Los Angeles (1925)—Los Angeles, Santa Barbara, Ventura, and Kern Counties.

   Fourth District—Incumbent, Fred R. DeLappe, Modesto (1925)—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera, Tulare, and Stanislaus Counties.

   Eighth District—Incumbent, James H. Parkinson, Sacramento (1925)—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc, and Siskiyou Counties.

   Councilor-at-Large—Incumbent, O. D. Hamlin, Oakland (1925).

   (d) Election of Member on Program Committee (four years)—Incumbent, Walter V. Brem, Los Angeles (1925).
   (e) Confirmation of Election by Council of Hans

Lisser, San Francisco, to replace T. C. Edwards, Salinas (1926), resigned Delegate to A. M. A.

(f) Confirmation of Election by Council of three Delegates to A M. A. needed to complete five authorized—Albert Soiland, Los Angeles (1927); Robert V. Day, Los Angeles (1927); Lemuel P. Adams, Oakland (1927).

(g) Confirmation of Election by Council of three Alternates to A. M. A. needed to complete five authorized—Charles D. Lockwood, Pasadena (1927); Robert Pollock, San Diego (1927); O. D. Hamlin, Oakland (1927).

5. Report of Reference Committee.
6. Presentation of President.
7. Presentation of President-Elect.
8. Reading and Adoption of Minutes.
Adjournment.

GENERAL INFORMATION

General Sessions—In case of inclement weather, General Sessions scheduled for the Lodge Tent will be held in the Government Pavilion, Yosemite Village, and other changes will be announced at the General Sessions.

Registration and Information—The registration and information desk is located at Yosemite Lodge. All persons attending the Convention, whether members or not, are requested to register immediately on arrival. Beginning Sunday, May 17, registration secretaries will be on duty daily from 9 a. m. until 4 p. m.

Guests and Visitors—All guests and visitors are requested to register. All General Sessions and scientific meetings are open to visitors and guests.

Badges—Four kinds of badges will be issued by the registration bureau. Members: Only active, associate, affiliate or honorary members of the California Medical Association will be issued the usual membership badge. Guest: A special badge will be issued to all fraternal delegates, visiting physicians, physiotherapists, medical social workers, nurses and other technical specialists who are attending the meetings upon official invitation of the Association. Delegates and Alternates: The usual official badge is provided for this purpose and will be issued to all persons authorized to wear it. Councilors: An official badge is provided for all members of the Council.

Membership Cards—Every member in good standing in the California Medical Association has been issued an official membership card for 1925. This card may be useful in connection with railroad tickets, and all members are requested to have their cards with them.

Suggestions and Constructive Criticism — The officers and committees have tried to do everything possible to make the meeting a success. Suggestions and constructive criticism calculated to make future meetings more useful will be welcomed by any of the officers. Complaints of whatever character should be made to the Registration Desk, where they will receive attention.

Social Program—No set social program has been arranged. The unusual attractions of Yosemite are believed to make this inadvisable. It is hoped that members and guests will form their own social contacts for sports, dinners, hiking and visits to places of interest. The program has been arranged so as to allow much time for amusement and recreation. There are no meetings before 10 a. m. and none between 12:30 and 2 p. m., and none between 4:30 and 8 in the evening.

Hospital—The Yosemite Hospital is located near Yosemite Lodge. Dr. Claude H. Church, who is in charge of the hospital, states that physicians and nurses are on duty at all hours.

Bus Line—The Yosemite Transportation System will maintain an adequate "street car" service between all meeting places of the various sections and the various hotels, including Camp Curry and the Lodge.

Press Representatives—Accredited press representatives are welcome and they will be accorded every possible courtesy.

Publicity—All publicity is in the hands of the Publicity Committee. It is requested that all persons having matter of "news" value report it to this committee. It is particularly requested that all "news" about any phase of the Convention be given out through the official committee and in no other way.

Exhibits—After mature deliberation by the Council and the Executive Committee it has been decided that no exhibits will be authorized. Accredited representatives of firms recognized in the advertising columns of California and Western Medicine will be accepted as accredited visitors to the Convention and authorized to solicit members and guests. Exhibits by all such representatives will be located in Oak and Cedar Cottages in Yosemite Village.

Rules Regarding Papers and Discussions at the State Meeting—Upon recommendation of the Executive Committee the following rules regarding papers have been adopted by the Council:

1. The maximum time that may be consumed by any paper is fifteen minutes, provided that not to exceed ten minutes' latitude may be allowed invited guests at the discretion of the presiding chairman.

2. Motions from the floor to extend the time of an author may not be entertained by the presiding officer.

3. The maximum time permitted any individual discussant on any paper is four minutes. This also applies to the author in closing his discussion. No discussant may speak more than once upon the same subject.

4. A copy of each and every paper presented at the State meeting must be in the hands of the chairman or secretary of the section or in the hands of the general secretary before the paper is presented.

5. Manuscripts not accepted by the Executive Committee for publication in the Journal will be returned to the author as soon as practicable. Authors desiring to publish their paper elsewhere than in the Journal may have their manuscript returned to them upon written request to the State Secretary.

6. No paper will be accepted by the General Program Committee nor by Section Program Committees unless accompanied by a synopsis of not to exceed fifty words.

7. Papers shall not be "read by title."

8. No member may present more than one paper at any one State meeting, provided that members may present additional papers before Sections on Technical Specialties; and provided further, that a member may be a collaborator on more than one paper, if these papers are presented by different authors.

9. Failure on the part of an author to present a paper precludes acceptance of future papers from such author for a period of two years, unless the author explains to the satisfaction of the Executive Committee his inability to fulfill his obligation.

FIRST GENERAL SESSION

GRANVILLE MACGOWAN, M.D., President,
Brack Shops Building, Los Angeles.

EMMA W. POPE, M. D., Secretary,
1016 Balboa Building, San Francisco.

Tent, Lodge, Monday, May 18, 10 a. m.

1. *President's Annual Address* — Granville MacGowan, M. D., Brack Shops Building, Los Angeles.
2. *Address of President-Elect*—Edward N. Ewer, M. D., 251 Moss Avenue, Oakland.
3. *Annual Report of the Council*—James H. Parkinson, M. D., chairman, 1601 I Street, Sacramento.
4. *Report of the Editor* — W. E. Musgrave, M. D., 806 Balboa Building, San Francisco.
5. *Report of the Legal Department* — Hartley F. Peart, General Counsel, 514 Humboldt Bank Building, San Francisco.

SECOND GENERAL SESSION

GRANVILLE MACGOWAN, M. D., President,
Brack Shops Building, Los Angeles.

EMMET RIXFORD, M. D., Chairman,
1795 California Street, San Francisco.

Dedication of Lafayette Houghton Bunnell Memorial

Foot of El Capitan, Tuesday, May 19, 10 a. m.

Automobiles conveying members to the dedication ceremony will leave Yosemite Lodge at 10 a. m., headed by officers of the California Medical Association and invited guests.

1. *Introductory Speech and Unveiling of Plaque to Doctor Lafayette Houghton Bunnell* — Granville MacGowan, M. D., President California Medical Association, Brack Shops Building, Los Angeles.
2. *Address*—Mr. W. B. Lewis, Superintendent Yosemite National Park.
3. *Explorers in the Sierras* — Francis Farquerer, Sierra Club, San Francisco.
4. *Doctor Lafayette Houghton Bunnell*—Emmet Rixford, M. D., Chairman Committee on Bunnell Memorial, 1795 California Street, San Francisco.

THIRD GENERAL SESSION

Medical Economics, Education and Hospitals

This Meeting Is Under the Auspices of the League for the Conservation of Public Health

DUDLEY SMITH, M. D., President, Oakland.

W. T. MCARTHUR, M. D., Secretary, Los Angeles.

Open to the Public and to all Members of the California Medical Association

Tent, Lodge, Wednesday, May 20, 10 a. m.

1. *What the League Is Doing* — Dudley Smith, M. D., President League for the Conservation of Public Health.
2. *What Does the Public Want?*—William Duffield, M. D., Los Angeles.
3. *Advertising That Preys*—Celestine J. Sullivan.
4. *What Does the Medical Profession Want?* — W. B. Coffey, M. D., San Francisco.
5. *Science Versus Ignorance*—Dr. David Starr Jordan, President Emeritus Stanford University.

FOURTH GENERAL SESSION

Tent, Lodge, Thursday, May 21, 10 a. m.

1. *A Discussion of Some of the Problems Relating to the Symptomatology, Prognosis and Treatment of Arteriosclerosis and Arterial Hypertension*—John Phillips, M. D., Assistant Professor of Therapeutics, Western Reserve University; Associate Visiting Physician, Lakeside Hospital, and Directory of Medicine, Cleveland Clinic, Cleveland, Ohio.
2. *The History and Problems of Disease* — Walter V. Brem, M. D., 932 Maltman Avenue, Los Angeles.
3. *The Importance of Prognosis in Surgery*—Roland E. Skeel, M. D., Westlake Professional Building, Los Angeles.

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

(Sub-organization of the California Medical Association organized in June, 1923, to eradicate conditions giving rise to malpractice actions, and to further the protection of its members in such actions.)

JAMES H. PARKINSON, M. D., Chairman, 1601 I Street, Sacramento.

EMMA W. POPE, M. D., Secretary, 1016 Balboa Building, San Francisco.

Pillsbury Pavilion, Lodge, Tuesday, May 19, 8 p. m.

1. Chairman's Address: *The Organization and Purposes of The Medical Society of the State of California*—James H. Parkinson, M. D., 1601 I Street, Sacramento.
2. *The Doctor in Court* — Address by Hon. George F. McNoble, President California State Bar Association, Farmers and Merchants Bank Building, Stockton.

ANESTHESIOLOGY SECTION

J. ROBERT BURROWS, M. D., Chairman, 2305 Sacramento Street, San Francisco.

LOUISE A. OLDENBOURG, M. D., Secretary, 3032 Colby Street, Berkeley.

MEETING

Pillsbury Studio, Village, Monday, May 18, 2 p. m.

1. Chairman's Address: *Teamwork*—J. Robert Burrows, M. D., 2305 Sacramento Street, San Francisco.
   Secretary's Report.
2. Election of Section Officers and Transaction of Other Section Business.
3. *Nitrous Oxide and Regional Anesthesia in Abdominal Surgery*—P. K. Gilman, M. D., 350 Post Street, San Francisco.
4. *Cardiac Decompensation in Pregnancy* — Karl L. Schaupp, M. D., 516 Sutter Street, San Francisco.
5. *Local Anesthesia in Abdominal Surgery* — H. A. L. Ryfkogel, M. D., 516 Sutter Street, San Francisco; E. Carlson, M. D., San Francisco Hospital, San Francisco.
6. *Collaborating on the Effects of Impurities Often Present in Nitrous Oxide* — William Hutchinson, M. D., Detwiler Building, Los Angeles; Donald E. Baxter, M. D., 910 North Brand Boulevard, Glendale.

PACIFIC COAST ASSOCIATION OF ANESTHETISTS

Joint meeting with the Section on Anesthesiology of the California Medical Association

CAROLINE B. PALMER, M. D., President,

2401 Sacramento Street, San Francisco.

ELEANOR SEYMOUR, M. D., Secretary.

845 West Tenth Street, Los Angeles.

FIRST MEETING

Pillsbury Studio, Village, Tuesday, May 19, 2 p. m.

1. Presidential Address: *Medication in Conjunction With Anesthesia*—Caroline B. Palmer, M. D., 2401 Sacramento Street, San Francisco.
2. *Evaluation of the Surgical Risk* — F. F. Gundrum, M. D., Capital National Bank Building, Sacramento; J. B. Harris, M. D., Capital National Bank Building, Sacramento.
3. *The Handling of Goitre Cases Demanding Surgery*—V. R. Mason, M. D., Pacific Mutual Building, Los Angeles; C. T. Sturgeon, M. D., 1136 West Sixth Street, Los Angeles.
4. *The Psychological Aspect of the Prospective Patient—and Special Reference to Pressure Induction*—Frank W. Chandler, D. D. S., Hollywood.
5. *Indications for General Anesthesia in the Extraction of Deciduous Teeth* — Evangeline Jordan, D. D. S., Los Angeles.
6. *Economies to be Effected in the Efficient Administration of Nitrous Oxide* — Donald E. Baxter, M. D., 910 North Brand Boulevard, Glendale.

SECOND MEETING

Pillsbury Studio, Village, Wednesday, May 20, 2 p. m.

1. *The Influence of Pre-operative Administration of Sugar in Acidosis*—Edgar I. Leavitt, M. D., 184 Forest Side Avenue, San Francisco.
2. *Preparation of the Diabetic for Surgery*—Horace J. Hagen, M. D., Santa Barbara.
3. *A Study of the Endocrines in Relation to Operative and Anesthetic Risk* — Clifford A. Wright, M. D., 2417 South Hope Street, Los Angeles.
4. *Blood Changes in Chronic Alcoholism — Their Similarity to Those Occurring in Chloroform and Ether Narcosis*—F. R. Nuzum, M. D., Cottage Hospital, Santa Barbara.
5. *Carbon Dioxide Method of De-Etherization* — Ethel Righetti, M. D., 305 Walnut Street, San Francisco.
6. *What is the Present Day Attitude of the Medical Profession Toward the Anesthetist?* — Jean Martin, M. D., 190 Twenty-seventh Avenue, San Francisco.

DERMATOLOGY AND SYPHILOLOGY SECTION

GEORGE DE WITT CULVER, M. D., Chairman,
323 Geary Street, San Francisco.

HIRAM E. MILLER, M. D., Secretary,
380 Post Street, San Francisco.

FIRST MEETING

Antler's Club, Village, Monday, May 18, 2 p. m.

1. Chairman's Address and Secretary's Report.
2. *Treatment of Poison-Oak Dermatitis*—Harry E. Alderson, M. D., 240 Stockton Street, San Francisco.
   Discussion opened by W. G. Donald, M. D., 2251 Telegraph Avenue, Berkeley.
3. *Trichophytosis of the Glabrous Skin as a Clinical Problem*—Moses Scholtz, M. D., Brockman Building, Los Angeles.
4. *Vincent's Angina—The Significance of Fusiform Bacilli and Vincent's Spirochetes in Mucous Membrane Lesions*—Hiram E. Miller, M. D., 380 Post Street, San Francisco; Norman Epstein, M. D., University of California Hospital, San Francisco.
5. *Favus*—Kendal P. Frost, M. D., Pacific Mutual Building, Los Angeles; George F. Koetter, M. D., Pacific Mutual Building, Los Angeles.

SECOND MEETING

Antler's Club, Village, Tuesday, May 19, 8 p. m.

1. *Electro-Coagulation and Electro-Dessication as a Means of Destroying Malignant and Benign Skin Lesions*—Ernest K. Stratton, M. D., 350 Post Street, San Francisco.
2. *Treatment of Skin Cancer*—Edwin D. Ward, M. D., 361½ South Columbia Avenue, Los Angeles.
3. *Acne Vulgaris*—Charles E. Schoff, M. D., Farmers and Merchants Bank Building, Sacramento.
4. *Skin Diseases in Twins*—Thomas J. Clark, M. D., Oakland Bank of Savings Building, Oakland; Frank H. Stibbens, M. D., Oakland Bank of Savings Building, Oakland.

THIRD MEETING

Antler's Club, Village, Wednesday, May 20, 10 a. m.

Symposium on Treatment of Syphilis

1. Election of Section Officers and Transaction of Other Section Business.
2. *Sulpharsphenamine—Indications for Its Use and Technic of Intramuscular Injection*—Irwin C. Sutton, M. D., Taft Building, Hollywood.
3. *The Present Status of Bismuth in Anti-Syphilitic Treatment*—Samuel Ayres, M. D., 2007 Orange Street, Los Angeles.
4. *Therapeutics of Syphilis*—Howard Morrow, M. D., 380 Post Street, San Francisco.

Discussion on Symposium to be opened by LeRoy H. Briggs, M. D., 380 Post Street, San Francisco; Ernest D. Chipman, M. D., 391 Sutter Street, San Francisco.

EYE, EAR, NOSE, AND THROAT SECTION

ERNEST W. FLEMING, M. D., Chairman,
Pacific Mutual Building, Los Angeles.

PERCIVAL DOLMAN, M. D., Secretary,
Flood Building, San Francisco.

FIRST MEETING

Sentinel Dining-room, Village, Monday, May 18, 8 p. m.

1. Chairman's Address and Secretary's Report.
2. *Epinephrin in Glaucoma*—Kaspar Pischel, M. D., 135 Stockton, Street, San Francisco.
3. *Studies in Ocular Dominance*—Lloyd Mills, M. D., Citizens National Bank Building, Los Angeles.
4. *A Study of the Sighting Eye in Young Children*—Percival Dolman, Flood Building, San Francisco.

SECOND MEETING

Sentinel Dining-room, Village, Tuesday, May 19, 2 p. m.

1. *The Correction of External Nasal Deformities* (Lantern Slides)—J. D. Lewis, M. D., San Marcos Building, Santa Barbara.
2. *Treatment of Cicatricial Stenosis of the Larynx*—Simon Jesberg, M. D., 1151 West Sixth Street, Los Angeles.
3. *Primary Carcinoma of Middle Ear With X-ray Progressive Study*—Frank Albert Burton, M. D., Watts Building, San Diego.
4. *Pregnancy as a Complicating Factor in Ear Infection* (Report of a Case)—Harold A. Fletcher, M. D., 135 Stockton Street, San Francisco.

THIRD MEETING

Sentinel Dining-room, Village, Wednesday, May 20, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *Value of Visual Field Findings in Cranial Injuries*—Theodore C. Lyster, M. D., 1920 Orange Street, Los Angeles.
3. *Present Status of the Mechanism of Accommodation as Confirmed by Experimental Data*—P. Obarrio, M. D., 350 Post Street, San Francisco.
4. *Technique of a Safer Method of Cataract Extraction*—Otis Allen Sharpe, M. D., 516 Sutter Street, San Francisco.

GENERAL MEDICINE SECTION

ERNEST S. DU BRAY, M. D., Chairman,
Flood Building, San Francisco.

ROY E. THOMAS, M. D., Secretary,
1136 West Sixth Street, Los Angeles.

FIRST MEETING

Government Pavilion, Village, Monday, May 18, 2 p. m.

1. *The Triple Syndrome Affecting Blood, Digestive and Nervous Systems*—Alfred C. Reed, M. D., 380 Post Street, San Francisco; Harry A. Wyckoff, M. D., Stanford University Medical School, San Francisco.
   The syndrome consists of a toxemia affecting: 1. Gastro-intestinal tract, tending toward atrophy, exemplified in sprue. 2. Blood system, tending toward pernicious anemia. 3. Nervous system, consisting of progressive combined degeneration of the postero-lateral tracts. All systems are affected, but with a wide variation of intensity. Etiology lies in protein poisoning or blood infection. Illustrated by cases.
2. *Sickle Cell Anemia* (Lantern Slides)—Gordon E. Hein, M. D., 1225 Bay Street, San Francisco; Randolph McCalla, M. D., San Francisco Hospital, San Francisco; George W. Thorne, San Francisco Hospital, San Francisco.
   A male negro, aged 20 years, whose mother had the latent phase of sickle cell anemia, was observed in the active phase of the same condition. What constitutes the clinical picture. Are the joint and muscle pains, the epigastric pain, the fever, the slightly enlarged heart with a systolic murmur, the presence of gall-stones to be interpreted as part of the disease, or are they complications? X-ray evidence suggests duodenal ulcer. How is it to be interpreted? A compilation of the symptoms and signs (exclusive of the blood findings) of the published active cases is presented. Observations of the blood at different periods in the course, particularly during exacerbations and remissions, were made. A few of the factors influencing the sickling were studied.
3. *The Treatment of Nephritis*—James W. Sherrill, M.D., La Jolla.
   The correlation between renal function tests and clinical findings in nephritis; changes in water balance in nephritis; hyperfunction in early renal lesions; renal function and changes in blood chemical

constituents; red cell volume and water balance in experimental partial nephrectomies.

4. *The Values of Gastro-Intestinal Motor Indices* (Lantern Slides)—Quinter O. Gilbert, M. D., Medical Building, Oakland.

Visceral symptoms arise largely from involuntary muscle disturbance. The symptomless abdomen has a rhythmic, orderly movement of contents, with a definite time sequence. Gastro-intestinal contents at the wrong place at the wrong time gives rise to local and reflex motor phenomena. A disturbance at one point influences the motility of the rest of the tract. The correct interpretation of these changes suggests the proper medical and surgical treatment. With a standard, fixed method of study, these changes may be expressed in a motor index formula.

5. *Diffuse Gastric Polyposis*—Four Cases (Lantern Slides)—Harold Brunn, M. D., 380 Post Street, San Francisco; Felix L. Pearl, M. D., 380 Post Street, San Francisco.

An analysis of fifty cases of diffuse polyposis of the stomach; this being a survey of all the cases reported in literature to date, with an additional report of four cases from the surgical service of the University of California Medical Department, three of which were operated upon by one of us. The analysis includes statistics of incidence, symptoms and signs, pathological anatomy, diagnosis and surgical treatment, supplemented by discussions of the history, etiology, and prognosis of the disease.

6. *Clinical Picture of Beginning Carcinoma of the Stomach (With Animadversions on the Radiological Illusions in Gastro-Intestinal Diseases)*—Harry I. Wiel, M. D., 135 Stockton Street, San Francisco.

History and clinical picture given of a patient who was operated upon and after pathological examination of tissues showed an actual incipient carcinoma of the stomach. As far as we can find, it showed the earliest stage of carcinoma of the stomach that has been seen and followed clinically and surgically. Comparison between the clinical picture of earliest carcinoma of stomach as evidenced by this patient and the usual picture of carcinoma of stomach which is always full-blown by the time we diagnose. The x-ray findings in this case are of interest out of the routine and lead to reflections on similar radiological experiences in other patients with gastro-intestinal diseases. Remarks as to the conclusiveness of positive x-ray findings in gastro-enterology.

SECOND MEETING

Government Pavilion, Village, Tuesday, May 19, 8 p. m.

1. Chairman's Address: *Comments on Body Weight in Relation to Health and Disease*—Ernest S. du Bray, M. D., Flood Building, San Francisco.
Secretary's Report.

2. *Prognosis and Choice of Treatment in Graves' Disease*—J. Marion Read, M. D., 870 Market Street, San Francisco.

The natural clinical course has an important bearing on the treatment and prognosis of Graves' disease. The prognosis varies with age, sex, and the particular stage of the disease the patient is in when seen by the physician. The nervous make-up of the patient is an important factor, especially in the more chronic types. An attempt to properly evaluate in each case the various factors concerned in producing and maintaining this disease state should yield more satisfactory therapeutic results. About 2 per cent of patients who have this disease will succumb. These are mostly the acute, fulminating cases. Prognosis in the remainder of the acute cases is favorable for recovery. The chronic cases, which constitute about one-half of those seen, offer more difficulty from a therapeutic standpoint, and the prognosis for permanent cure is unfavorable.

3. *The Diabetic at Home*—Howard F. West, M. D., 1032 West Eighteenth Street, Los Angeles.

A discussion of some of the problems met with in an effort to keep the diabetic patient under control and to aid him in realizing the health promised by modern methods after he leaves the hospital and the first intensive study. Illustrative cases showing the various sources of difficulties and some suggestions for their solution.

4. *The Clinical Significance of Bundle Branch Lesions*—Arthur Stanley Granger, M. D., 2007 Orange Street, Los Angeles.

Introduction: Pathology of these lesions. Mechanism of production of the very interesting electrocardiographic findings in the so-called bundle branch lesions. Symptoms and clinical signs in a group of thirty-five cases. Importance of demonstrating this condition, particularly from the standpoint of prognosis. Electro-cardiograms illustrating the typical findings, with a few case reports.

5. *A Clinical and Surgical Check on Liver Function Tests*—John V. Barrow, M. D., Westlake Professional Building, Los Angeles; William H. Olds, M. D., 607 South Hill Street, Los Angeles; Eugene L. Armstrong, M. D., 2005 Orange Street, Los Angeles.

1. The tests in every-day laboratory use; their technic and usability by the general profession. 2. What is shown in the normal individual under changes of physiologic conditions, as starvation, full stomach, fatty diet, starchy diet, and other conditions. 3. Application to clinical cases with reports. 4. Relative value of each test. 5. Conclusions.

THIRD MEETING

Government Pavilion, Village, Thursday, May 21, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.

2. *The Value of the Salivary Index as a Practical Office Procedure*—Clair L. Stealy, M. D., 415 Elm Street, San Diego.

1. Method of obtaining saliva, technique of test and salivary index (Hench and Aldrich). 2. Comparison of salivary urea by use of index with blood urea. 3. Type of cases used in, with findings. 4. Kidney function estimation by use of salivary urea, blood urea, urinary urea and phenolphthalein test. Summary of value.

3. *The Dianosis of Chronic Amebiasis*—W. T. Davidson, M. D., 350 Post Street, San Francisco.

1. Prevalence in California. Soldiers returned from World War. Former residents of tropical and sub-tropical regions. Indigenous. 2. Diagnosis. Clinical symptoms. Typical cases. Series examination of stools following treatment, an important feature frequently overlooked in previous handling of case. Technic of these examinations. A typical case. Metastatic infections. Cytologic diagnosis. Specific organism; cysts.

4. *Therapeutics of Rest*—Allen H. Williams, M. D., 11 East Delaguerra Street, Santa Barbara.

5. *Pneumonic Plague*—Emil Bogen, M. D., 1100 Mission Road, Los Angeles; George Maner, M. D., 1100 Mission Road, Los Angeles.

Plague endemic in California. Recent epidemic of pneumonic form in Los Angeles emphasizes danger. Clinical diagnosis based upon history of exposure, high fever, severe prostration, diffuse bronchopneumonia, bloody sputum, and glandular enlargements. Laboratory aids by sputum smear, gland aspiration, guinea pig inoculation, and post-mortem findings. Therapy unsatisfactory. Prognosis poor. Prevention essential.

6. *Medical Management of Trophic Changes Incident to Vascular Disease*—J. Edward Harbinson, M. D., Woodland.

1. Selected cases of trophic changes, including gangrene, complicating endarteritis and other types of vascular disease can be treated with success medically. 2. Treatment: (a) General treatment of underlying cause. (b) Supplemental treatment: elimination of infection, rest in bed, heliotherapy, massage, sodium citrate intravenously and by mouth. 3. Results are good if economically feasible. 4. Report of cases.

GENERAL SURGERY SECTION

WALLACE I. TERRY, M. D., Chairman,
380 Post Street, San Francisco.

C. T. STURGEON, M. D., Secretary,
1136 West Sixth Street, Los Angeles.

FIRST MEETING

Government Pavilion, Village, Monday, May 18, 8 p. m.

1. Chairman's Address and Secretary's Report.
2. *The Relationship of the Clinical Pathologist to Surgical Practice* — Verne C. Hunt, M. D., Mayo Clinic, Rochester, Minnesota.

   A discussion of the present-day role of the clinical pathologist. A statistical presentation illustrating the necessity of co-operation between pathologist and surgeon. A consideration of the influence of the clinical pathologist in the exercise of surgical judgment. Method of determining operability and a guide for the magnitude justifiable of a proposed surgical procedure. A basis of relative prognosis.
3. *Prophylaxis in the Treatment of Wound Infections*—Karl F. Meyer, M. D., Hooper Foundation, San Francisco.

   A brief presentation of the various methods which have recently been developed to combat wound infections. In particular, the following will be considered: Sterilization of skin, the use of antitoxins against anaerobic infections, bacteriophage treatment, local application of filtered cultures, chemotherapy with vuzin, rivanol, etc.

   Discussion opened by A. S. Lobingier, M. D., 307 West Eighth Street, Los Angeles; L. W. Hotchkiss, M. D., San Marcos Building, Santa Barbara.
4. *Some Surgical Aspects of Tubercular Peritonitis*—Charles D. Lockwood, M. D., 295 Markham Place, Pasadena.

   A brief review of the literature of this subject, with special reference to the sources of infection and the routes of invasion. The possibility of direct infection from ruptured mesenteric glands. Discussion of surgical treatment and results. The surgical treatment of this condition has made very little progress and is still very unsatisfactory. The possibility of improved results by other methods of treatment. Report of cases.

   Discussion opened by H. Brunn, M. D., 380 Post Street, San Francisco; Homer C. Oatman, M. D., Watts Building, San Diego.
5. *A Brief Outline of the Cause and Treatment of Chronic Polyarthritis* (Report of 104 Cases) — Rea Smith, M. D., 1136 West Sixth Street, Los Angeles.

   The cause of chronic deforming polyarthritis lies in the ileocecal coil. The joints are a constitutional expression of a local disease. Treatment which does not include perfect intestinal drainage is not rational. Perfect intestinal drainage followed by restoration of bacterial balance will arrest disease and affect symptomatic cure, after which orthopaedic procedures to restore joint mobility can be carried out without fear of lighting up joint inflammation.

   Discussion opened by Ellis Jones, M. D., 1136 West Sixth Street, Los Angeles.
6. *Thyroiditis* — Henry H. Searls, M. D., 1308 Fifth Avenue, San Francisco.

   Division into acute, subacute, and chronic thyroiditis. Discussion of these groups with regard to incidence, etiology, diagnosis, treatment, and prognosis. In the main, a detailed study of the possible etiology and the clinical picture of chronic diffuse thyroiditis, together with its relationship to and differentiation from hyperplasia of the thyroid gland. References.

   Discussion opened by C. G. Toland, M. D., 523 West Sixth Street, Los Angeles; E. I. Bartlett, M. D., 240 Stockton Street, San Francisco.

SECOND MEETING

Government Pavilion, Village, Tuesday, May 19, 2 p. m.

1. *The Value of Ventriculography in Localizing Brain Tumors*—Carl W. Rand, M. D., 140 South Norton Street, Los Angeles.

   Summary of writer's cases in which the ventricle study has been carried out. Value of the procedure (a) as confirming previous neurological findings; (b) in the absence of localizing signs; percentage of cases in which tumors were localized; failure of ventricle study due to errors in technique. Mortality.

   Discussion opened by H. C. Naffziger, M. D., 380 Post Street, San Francisco; Edward B. Towne, M.D., Stanford University Medical School, San Francisco.
2. *Surgical Judgment* — Fred R. Fairchild, M. D., Woodland.

   Surgical judgment sound only if based on detailed knowledge of every factor of each case. These facts can only be known by facts obtained from (a) complete history, (b) complete physical examination, (c) all essential laboratory data. Since disaster often follows surgical operations, based on poor judgment (which is usually lack of knowledge of facts that should have been obtained) it is submitted that some constituted authority should have the right to demand for review the records of any case. The purpose of this review would be to determine whether or not the patient's safety had been properly guarded.

   Discussion opened by A. B. Cooke, M.D., Hollingsworth Building, Los Angeles; C. M. Fox, M.D., Electric Building, San Diego.
3. *Knee-joint Surgery*—Ellis W. Jones, M. D., 1136 West Sixth Street, Los Angeles.

   The present status of surgery in relation to disabilities of the knee-joint presents a wider scope for more efficient treatment and favorable prognosis in the end-results in cases of deranges menisci, loose bodies, infectious arthritis secondary to trauma, monoarticular types of chronic hypertrophic arthritis and fractures involving the joint.

   Discussion opened by W. I. Baldwin, M. D., 380 Post Street, San Francisco.
4. *Diaphragmatic Hernia*—Case Reports (Lantern Slides) —John Homer Woolsey, M. D., 135 Stockton Street, San Francisco.

   Diaphragmatic hernia is not of rare occurrence. Discussion will be according to the three types—congenital, acquired and traumatic, with regard to cause, location, symptomatology, and treatment.

   Discussion opened by H. Brunn, M. D., 380 Post Street, San Francisco; J. H. Breyer, M. D., Chamber of Commerce Building, Pasadena.
5. *The Surgical Treatment of Echinococcosis* — H. W. Mills, M. D., Chamber of Commerce Building, San Bernardino.

   Paper a purely academical one. Justification of title Dévé's work on spontaneous cure by vomica of certain hydatid cysts of lung. Echinococcosis hydatidosis and echinococcosis bavaro-tyrolienne. Surgical treatment of hydatid cysts of liver, lung, kidney, spleen, brain, muscles and connective tissue, pelvis, and certain rare locations. Remarks on Finochietto's trocar-aspirator.

   Discussion opened by P. K. Gilman, M. D., 350 Post Street, San Francisco; C. C. Snyder, M. D., 44 South Marengo Avenue, Pasadena.

THIRD MEETING

Government Pavilion, Village, Wednesday, May 20, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *Myositis Ossificans Traumatic, With Special Reference to Exostoses Following Dislocations of the Elbow* (Lantern Slides)—Emmet E. Rixford, M. D., 1795 California Street, San Francisco.

   Etiology: Clinical course and treatment, especially choice of time for operative removal.
3. *Prognosis of Treatment for Congenital Hypertrophic Stenosis*—Burns S. Chaffee, M. D., Maxwell Building, Long Beach.

   Differentiation between the two types of pyloric obstruction, the "hypertrophic" and the "spasmodic," has caused confusion in the treatment of the former type. Early operations were accompanied with a

high mortality, as they were not adaptable to infant subjects. Today surgical treatment is standardized, and most excellent results are obtained. Ultra-conservatism not infrequently blocks the golden opportunity of saving the lives of infants.

Discussion opened by Guy Cochran, M. D., Pacific Electric Building, Los Angeles; Alanson Weeks, M. D., 380 Post Street, San Francisco.

4. *Cancer of the Colon* — Samuel Robinson, M. D., San Marcos Building, Santa Barbara.

A plea for the earlier recognition of tumors of the large bowel. Pathology and operability. Reduction in mortality should result from closer study of symptoms and the choice of such operative methods as may be consistent with the patient's condition and the experience and skill of the surgeon.

Discussion opened by J. H. Shepherd, M. D., Twohy Building, San Jose; H. H. Sherk, M. D., 268 South Grove Street, Pasadena.

5. *The Pre-operative Preparation and Surgical Treatment of Carcinoma of the Pancreas With Common Duct Obstruction*—Leo P. Bell, M. D., Woodland.

1. Discussion of the literature, its etiology, pathology, and occurrence. 2. Discussion of the pre-operative preparation in regard to the intravenous administration of sodium chloride, transfusions, administration of calcium, together with the increased clotting and nephrosis of all secretory, glandular tissue. 3. Discussion of the operative choice and technique of cholecystogastrostomy and cholecystoduodenostomy. 4. Presentation of cases and prognosis. 5. Discussion of liver regeneration during and following the relief of the obstructive jaundice.

Discussion opened by E. C. Moore, M. D., 511 South Bonnie Brae, Los Angeles; James Percy, M. D., 1030 South Alvarado Avenue, Los Angeles.

6. *Intestinal Obstruction* (Review of Ninety-three Cases) —Edmund Butler, M. D., Butler Building, San Francisco; G. D. Delprat, M. D., San Francisco Hospital, San Francisco.

Intestinal obstruction (a) age, (b) sex, (c) duration of symptoms, (d) symptoms as presented: 1, vomiting; 2, pain; 3, distention; 4, peristalsis: 5, fever; 6, non-prot. nitrogen of blood; 7, shock; 8, leucocytosis; (e) signs of peritonitis, (f) procedure, (g) post-operative complications, (h) time in hospital, (i) mortality.

Discussion opened by Walter L. Huggins, M. D., 523 West Sixth Street, Los Angeles; Thomas O. Burger, M. D., First National Bank Building, San Diego.

INDUSTRIAL MEDICINE AND SURGERY SECTION

PHILIP H. STEPHENS, M. D., Chairman,
Pacific Electric Building, Los Angeles.

PACKARD THURBER, M. D., Secretary,
906 Black Building, Los Angeles.

FIRST MEETING

Tent, Lodge, Monday, May 18, 2 p. m.

1. Chairman's Address and Secretary's Report.
2. *Derangement of the Ankle-joint Following Fractures of the Lower End of the Tibia and Fibula* (Lantern Slides)—Lionel D. Prince, M. D., 870 Market Street, San Francisco.

The purpose of this paper is, firstly, to emphasize the importance of absolute reduction of fractures of the tibia and fibula above the ankle-joint where the proper weight-bearing alignment is destroyed; and secondly, to emphasize the operative correction in those cases where union has been permitted to take place without regard for the restoration of the proper weight-bearing alignment. The method of conservative reduction is given and likewise the operative technique in those cases where mal-union is present.

3. *Industrial Hernia vs. Seminal Vesiculitis* — Miley B. Wesson, M. D., 870 Market Street, San Francisco.

A large proportion of people are born with a potential hernia, and many of these acquire a seminal vesiculitis. Following a strain, there is a flare-up of the infection, which manifests itself as a vasitis. The first subjective symptom is a pain in the groin which the patient too often attempts to sell to the insurance company as an industrial hernia. The literature of traumatic hernia, as well as seminal vesiculitis, has been reviewed. Forty new cases of vasitis, many of which were diagnosed as hernia, are briefly reported.

Discussion opened by Emmet Rixford, M. D., 1795 California Street, San Francisco; H. A. Rosenkranz, M. D., N. P. Story Building, Los Angeles.

4. *The Diagnosis of Lead Poisoning in Industrial Plants* —C. O. Sappington, 354 Grand Avenue, Oakland.

1. Introduction. (a) Importance of lead in manufacturing; as toxicological hazard. (b) Recent work on lead poisoning in United States, Harvard Lead Unit, Industrial Clinic at Massachusetts General Hospital, the work of Hamilton, Wright, Shie, and others. (c) Recent experience with lead poisoning in California. 2. Important considerations bearing on the diagnosis of lead poisoning. (a) All compounds dangerous. (b) Dangerous forms; dust and fumes. (c) Ports of entry to the body. (d) Dangerous amounts of lead. (e) The cumulative effect. (f) Personal idiosyncrasy. (g) Age and sex. 3. The diagnostic standards of the United States Public Health Service. 4. Controversial diagnostic points with suggestions for changes in technique. (a) The lead line on the gums. (b) Methods of staining for stippled red cells. (c) Examination of muscle groups. (d) Tests for lead in air, urine, and feces. Medico-legal aspects. (e) The distinction between lead absorption and lead poisoning. 5. Summary.

SECOND MEETING

Tent, Lodge, Tuesday, May 19, 8 p. m.

Open Meeting With the State Committee on Industrial Medical Practice

THIRD MEETING

Tent, Lodge, Thursday, May 21, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *Milkman's Foot, an Industrial Injury*—Floyd Thurber, Black Building, Los Angeles.

1. Introduction. (a) Occurs particularly to milk route men. (b) Caused by repeated jumping on and off wagon. 2. Frequency. (a) Not an uncommon injury. (b) Failure of many cases to report. 3. History. (a) Important to diagnosis. 4. Examination. (a) All ligaments about foot and ankle. (b) Muscles of foot and calf. 5. Diagnosis. (a) History. (b) Examination. 6. Treatment. (a) Relief of strain. (b) Temporary support until muscles and ligaments become stronger. (c) Importance of patient continuing work with proper support of injured tissues. 7. Prognosis.

3. *Industrial Liability for Cancer*—A. R. Kilgore, M. D., 391 Sutter Street, San Francisco; Curtis E. Smith, M. D., 391 Sutter Street, San Francisco.

1. Brief consideration of relation of injury to (a) tumor origin, (b) tumor growth and metastasis. 2. Tumors likely to arise or be accelerated by a single occupational injury. 3. Tumors likely to arise from repeated mechanical or chemical injury. 4. Standardization of evidence necessary to hold injury responsible for tumor origin. 5. Evidence necessary to hold injury responsible for acceleration of tumor growth. 6. Suggested standardization of pro-

cedure in selected types of injury to avoid industrial losses from tumors.

NEUROPSYCHIATRY SECTION

GLENN E. MYERS, M. D., Chairman,
Marsh-Strong Building, Los Angeles.

JOSEPH CATTON, M. D., Secretary,
209 Post Street, San Francisco.

FIRST MEETING

Sentinel Dining-room, Village, Monday, May 18, 2 p. m.

1. Chairman's Address and Secretary's Report.
2. *Tryparsamide in Late Neurosyphilis*—J. Ross Moore, M. D., 520 West Seventh Street, Los Angeles; Irwin C. Sutton, M. D., Taft Building, Hollywood, Los Angeles.
3. *Clinical Report of Twelve Cases of Spinal Cord Tumor, With Special Reference to Early Symptomatology*—Thomas J. Orbison, M. D., 2007 Wilshire Boulevard, Los Angeles.
4. *Results of X-ray Treatment of Tumors of the Brain and the Hypophysis*—E. B. Towne, M. D., Stanford Medical School, San Francisco.
5. *Effect of Radium on General Paralysis*—Aaron J. Rosanoff, M. D., Westlake Professional Building, Los Angeles.

SECOND MEETING

Sentinel Dining-room, Village, Tuesday, May 19, 8 p. m.

1. *The Endocrine Influence in Certain Psychoses*—Edward Huntington Williams, M. D., Pacific Mutual Building, Los Angeles.
2. *Tuberculosis from the Psychiatric Approach—A Report of an Analysis of Forty Cases in and Out of Tuberculosis Hospitals*—Anita M. Muhl, M. D., Commonwealth Building, San Diego.
3. *The Psychiatrist in the University*—Eva C. Reid, M. D., 909 Hyde Street, San Francisco.
4. *The Plea for a Saner Psychology in Explanation of Psychoneuroses*—Milton B. Lennon, M. D., 380 Post Street, San Francisco.

THIRD MEETING

Sentinel Dining-room, Village, Thursday, May 21, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *The Closure of Skull Defects*—Charles L. Tranter, M. D., 209 Post Street, San Francisco.
3. *Bladder Disturbances in Lesions of the Nervous System*—Leon Meyers, M. D., 815 South Hill Street, Los Angeles.
4. *A Clinical and Pathological Study of a Fourth Ventricle Tumor Causing Symptoms of Marked Dystonia*—Walter F. Schaller, M. D., 909 Hyde Street, San Francisco.
5. *A Case of Familial Hereditary Ataxia*—Dwight E. Shepardson, M. D., Lane Hospital, San Francisco; Howard C. Naffzgier, M. D., 380 Post Street, San Francisco.

OBSTETRICS AND GYNECOLOGY SECTION

PETER O. SUNDIN, M. D., Chairman,
H. W. Hellman Building, Los Angeles.

JOHN W. SHERRICK, M. D., Secretary,
350 Twenty-ninth Street, Oakland.

FIRST MEETING

Pillsbury Pavilion, Lodge, Monday, May 18, 2 p. m.

Symposium on Eclampsia

1. Chairman's Address and Secretary's Report.
2. *Etiology of Eclampsia*—P. O. Sundin, M. D., H. W. Hellman Building, Los Angeles.

   Discussion to be opened by G. C. McPheeters, 1021 Mattei Building, Fresno.
3. *Laboratory Aids in the Diagnosis and Control of Eclampsia*—H. A. Stephenson, M. D., 516 Sutter Street, San Francisco.

   Eclampsia defined. The true nature of the disease is not definitely known. Clinical symptoms of the condition. Clinical findings in the disease. Known pathology. Difficulty in differential diagnosis. Brief mention of various procedures used in attempts at diagnosis. The relative value of these procedures. Treatment of eclampsia. Conclusions.

   Discussion to be opened by H. M. Ross, M. D., 523 West Sixth Street, Los Angeles.
4. *Recurrent Toxemia*—Hans von Geldern, M. D., 516 Sutter Street, San Francisco.

   This paper is a consideration of all of the clinic patients entering the Lane Hospital and out-patient women's clinic with a diagnosis of toxemia of pregnancy, with special reference to previous and subsequent pregnancies. Those cases with histories of recurrences are especially dealt with to bring out the serious nature of recurrences.

   Discussion to be opened by F. C. Ainley, M. D., 1136 West Sixth Street, Los Angeles.
5. *The Conservative Treatment of Eclampsia*—Margaret Schulze, M. D., University of California Hospital, San Francisco.

   Etiology of eclampsia as yet unknown. Old idea that immediate delivery is essential. Question whether in some cases trauma of operative delivery is not the immediate cause of death. Remarkable results of Stronganoff with his method of profound narcosis. Rotunda elimination treatment. Venesection method of Lichtenstein. Outline of treatment employed at University of California and discussions of results.

   Discussion opened by E. N. Ewer, M. D., 251 Moss Avenue, Oakland.
6. *The Role of Cesarean Section in the Treatment of Eclampsia*—J. C. Irwin, M. D., Union Bank Building, Los Angeles.

   Discussion opened by R. K. Smith, M. D., 391 Sutter Street, San Francisco.

SECOND MEETING

Pillsbury Pavilion, Lodge, Tuesday, May 19, 2 p. m.

Joint Meeting With Pediatricians

Symposium on Birth Injuries

1. *Cranial and Intra-Cranial Injuries in the New-Born From the Standpoint of the Obstetrician*—F. M. Loomis, M. D., 350 Twenty-ninth Street, Oakland.
2. *Symptoms and Diagnosis in Infants—Clinical Significance in Later Years*—Ralph H. Kuhns, M. D., 135 Stockton Street, San Francisco.
3. *Surgical Management*—H. C. Naffziger, M. D., 380 Post Street, San Francisco.
4. *Mongolism in Twins*—Henry Dietrich, M. D., 1136 West Sixth Street, Los Angeles.

THIRD MEETING

Pillsbury Pavilion, Lodge, Thursday, May 21, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.

Symposium on Pelvic Relaxation and Prolapse

2. *Some Points in the Anatomy and Mechanics of the Pelvic Floor*—A. W. Meyer, M. D., Stanford University.

   An evaluation of the role played in pelvic support by some of the constituents of the pelvic and urogenital diaphragms, with special reference to views in current textbooks and periodical literature.

   Discussion opened by C. H. Weaver, M. D., 2007 Orange Street, Los Angeles.
3. *Predisposing Factors in Pelvic Relaxation and Pro-*

lapse—John Vruwink, M. D., 523 West Sixth Street, Los Angeles.

The etiology of pelvic relaxation depends, to a large extent, upon constitutional inferiority or debility. Births, however, give rise to enlargement of the genital hiatus, subinvolution, hyperextension of the ligaments and prolapse. Birth trauma depends upon various factors, but is more frequent after certain forms of delivery. Adequate ante-partum and post-partum care are prophylactic measures for prolapse.

4. *Benign Lesions of the Cervix in Association With Pelvic Relaxation and Prolapse*—Michael Creamer, M. D., 520 West Seventh Street, Los Angeles.

Discussion opened by A. V. Pettit, M. D., 1499 Sutter Street, San Francisco.

5. *The Problem of Partial Prolapse With Cystocele and Rectocele in Young Women* — Frank Lynch, M. D., University of California Hospital, San Francisco.

Discussion opened by W. Clifford McKee, M. D., 1136 West Sixth Street, Los Angeles.

6. *The Treatment of Procidentia* — Alfred B. Spalding, M. D., Lane Hospital, San Francisco.

The study of the proper treatment for pelvic prolapse has been made from a review of the histories of some 400 patients in the Women's Clinic of Stanford University. This group includes various degrees of cystocele, rectocele, and uterine prolapse. With lantern slides, it will be attempted to demonstrate the method used at Stanford for the past eight years. This consists of dissecting the pelvic fascia and overlapping the same according to the Neel-Rawls' technique for cystocele; the removal of the uterus in all cases of prolapse and the cone amputation of the cervix with Watkins Wertheim interposition operation on patients without prolapse; the wide dissection of the posterior vaginal wall and the elevation of the rectum according to the method described by the author three years ago for rectocele. Special effort will be made to describe the method used for the control of hemorrhage in vaginal hysterectomy. Finally, some comments on the various methods used for restoring pelvic floor relaxation. In general, the results have been good. There have been the fewest returns of pelvic prolapse and cystocele. The chief difficulty with pelvic prolapse has been found with the posterior segment. The former difficulties of post-operative hemorrhage have been practically eliminated by the present technique.

Discussion opened by J. A. Sperry, 275 Post Street, San Francisco.

PATHOLOGY AND BACTERIOLOGY SECTION

NEWTON EVANS, M. D., Chairman,
Loma Linda.

ROY W. HAMMACK, M. D., Secretary,
523 West Sixth Street, Los Angeles.

FIRST MEETING

Sentinel Lobby, Village, Monday, May 18, 2 p. m.

1. Chairman's Address and Secretary's Report.
2. *Mitotic Figures in Malignant Tumors as Affected by Time Before Fixation of Tissues*—Newton Evans, M. D., College of Medical Evangelists, Loma Linda.
3. *Rupture of the Heart Wall—Five Examples* — F. R. Nuzum, M. D., Santa Barbara Cottage Hospital, Santa Barbara; H. J. Hagen, M. D., Santa Barbara Cottage Hospital, Santa Barbara.
4. *The Pathology of Plague*—George D. Maner, M. D., 1100 Mission Road, Los Angeles; Lawrence Parsons, M. D., 1100 Mission Road, Los Angeles.
5. *Giant Cell Tumors Unconnected With Bone*—Lenore Campbell, M. D., College of Medical Evangelists, Loma Linda.

SECOND MEETING

Sentinel Lobby, Village, Tuesday, May 19, 8 p. m.

1. *The Effects of Insulin Treatment on Experimental Diabetes of Dogs*—E. F. F. Copp, M. D., Scripps Metabolic Clinic, La Jolla.
2. *Should the Schick Test be Abandoned?*—W. H. Kellogg, M. D., State Hygienic Laboratory, Berkeley.
3. *Observations on the Tubercumet Reaction* — A. M. Moody, M. D., St. Francis Hospital, San Francisco.
4. *Infectious Mononucleosis, With Report of Five Cases*—Hersel Butka, M. D., White Memorial Hospital, Los Angeles.
5. *A Statistical Study of 13,000 Wassermann Examinations Among Railway Employes*—W. T. Cummins, M. D., Southern Pacific Hospital, San Francisco.

THIRD MEETING

Sentinel Lobby, Thursday, May 21, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *Syringomyelia and Syringobulbia* — Charles E. Nixon, M. D., 870 Market Street, San Francisco.
3. *Epithelioma of Uterus in a Rabbit*—Norman N. Epstein, M. D., University of California Hospital, San Francisco.
4. *Osteosclerotic Anemia*—W. L. Miles, M. D., University of California Hospital, San Francisco.
5. *Osteosclerotic Pseudoleukaemia* — Glanville Y. Rusk, M. D., University of California Hospital, San Francisco.

PEDIATRICS SECTION

ROBERT E. RAMSAY, M. D., Chairman,
959 East Colorado Street, Pasadena.

C. D. SWEET, M. D., Secretary,
242 Moss Avenue, Oakland.

FIRST MEETING

Pillsbury Pavilion, Lodge, Monday, May 18, 8 p. m.

1. Chairman's Address: *Social Aspects of the Free Dispensary* — Robert E. Ramsey, M. D., 959 East Colorado Street, Pasadena.

The free dispensary exists to give medical attention to deserving poor people. Many who are not poor take advantage of the situation. This is an outrage both to the givers of money and to the physicians who give their services. A study is made of patients seeking admission to a dispensary for children. Standards for admission are suggested. The necessity for social investigation is indicated. Justice to donors and physicians requires that social investigation of all applicants be made. The deserving poor do not object to visits which confirm their statements. The undeserving are discovered and excluded.

Secretary's Report.

2. *Allergy in Childhood—Its Manifestations and Recognition*—George Piness, M. D., 1136 West Sixth Street, Los Angeles.
3. *Allergy in Childhood—Its Treatment*—Albert H. Rowe, M. D., 242 Moss Avenue, Oakland.
4. *Antrum Disease in Childhood — Its Recognition and Treatment—Report of Cases*—F. M. Shook, M. D., 1904 Franklin Street, Oakland.

SECOND MEETING

Pillsbury Pavilion, Lodge, Tuesday, May 19, 2 p. m.

Joint Meeting With Obstetricians

Symposium on Birth Injuries

1. *Cranial and Intra-Cranial Injuries in the New-Born From the Standpoint of the Obstetrician* — F. M. Loomis, M. D., 350 Twenty-ninth Street, Oakland.
2. *Symptoms and Diagnosis in Infants—Clinical Signifi-*

cance in Later Years—Ralph H. Kuhns, M. D., 135 Stockton Street, San Francisco.

3. *Surgical Management*—H. C. Naffziger, M. D., 380 Post Street, San Francisco.
4. *Mongolism in Twins*—Henry Dietrich, M. D., 1136 West Sixth Street, Los Angeles.

THIRD MEETING

Pillsbury Pavilion, Lodge, Wednesday, May 20, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *The Importance of the Teaching of Nutrition in the Public Schools*—William M. Happ, M. D., 523 West Sixth Street, Los Angeles.

   The prevalence of undernutrition in children of school age is well known, and the children of Los Angeles show no exception to the rule. A survey of a number of representative schools shows that over 15 per cent of the children in this city are more than 10 per cent underweight for their height and age. A much larger percentage are undernourished, who are not greatly underweight. Nutrition classes have been organized for the most markedly undernourished children in over 100 schools. In these classes, which meet daily, the children are taught the principles of proper diet, rest, health habits, etc. The results are very satisfactory, as improvement in nutrition is the rule. We feel that the school is the ideal place to teach nutrition to the children, the reasons for which, and the methods of organization of the work, are outlined in the paper.
3. *The Health Department—Its Relation to Child Welfare*—John J. Sippy, M. D., 129 South American Street, Stockton.
4. *The Significance and Treatment of Growth Deviations in Childhood*—C. L. Lowman, M. D., 2417 South Hope Street, Los Angeles.

   The main points covered will be: Disturbed body posture, especially significant of antero-posterior deviations in relation to fatigue and disturbance of chest and abdominal functions; growth handicaps due to nerve loss from muscular overwork; significance of foot and leg deviations; relation to nervous states and future disability, especially in relation to back strain.
5. *Tuberculous Infection and Disease in Infancy and Childhood*—William Palmer Lucas, M. D., University of California Hospital, San Francisco.

RADIOLOGY SECTION

(Including Roentgenology and Radium Therapy)

RAY G. TAYLOR, M. D., Chairman,
302 South St. Andrews Place, Los Angeles.

ROBERT NEWELL, M. D., Secretary,
Lane Hospital, San Francisco.

FIRST MEETING

Sentinel Lobby, Village, Monday, May 18, 8 p. m.

1. Chairman's Address and Secretary's Report.
2. *X-ray and Radium Treatment of Uterine Tumors*—Frederick H. Rodenbaugh, M. D., 516 Sutter Street, San Francisco.

   Classification of cases suitable for treatment. Technique and selection of suitable agent. End-results of radiation therapy on the uterus and adnexia. Economic values. Comparison with surgical and other methods of treatment.

   Discussion opened by Frank W. Lynch, M. D., University of California Hospital, San Francisco; A. B. Spalding, M. D., Lane Hospital, San Francisco.
3. *General Consideration of the Treatment of Superficial Malignancies by Means of Radium and the X-ray*—Albert Soiland, M. D., 1407 South Hope Street, Los Angeles; William E. Costolow, M. D., 1407 South Hope Street, Los Angeles.

   General remarks on technique. Comparison of the radiation treatment with methods of treatment used prior to the general acceptance of the radiation treatment.
4. *Treatment of Breast Cancer*—Rex Duncan, M. D., 1151 West Sixth Street, Los Angeles.

   Brief discussion of the various methods with statistics. X-ray as an adjunct to surgery. Microscopical studies of the effect of x-ray in breast cancer. Clinical observations in fifty cases treated by combined radiation and surgery.

SECOND MEETING

Sentinel Lobby, Village, Tuesday, May 19, 2 p. m.

1. *X-ray Diagnosis of Inflammatory Conditions of the Thorax*—Lloyd Bryan, M. D., 135 Stockton Street, San Francisco.

   Uses and limitations of the roentgen ray differentiating between (a) tuberculosis; (b) tumors; (c) inflammatory lesions. The value of lipiodol in (a) bronchiectasis; (b) abscess; (c) tumors. Lantern slide demonstration of typical lesions.
2. *The Necessity for the Close Co-operation of the Roentgenologist and the Clinician in the Diagnosis of Lung Pathology*—W. R. P. Clark, M. D., 516 Sutter Street, San Francisco.

   Introductory remarks. X-ray diagnosis, clinical aspects and demonstration of cases.
3. *Technique of the X-ray Examination of Patients With Digestive Disorders—A Plea for Standardization With Reason Why*—M. P. Burnham, M.D., St. Francis Hospital; J. R. O'Neill, M. D., St. Francis Hospital, San Francisco.

   History of development of examination. Statement of uses and value of fluoroscope and films, separately and combined. Routine to be followed and technique. Question of expenses. Danger of taking short-cuts. Importance of personal observation at operations of patients examined. Value of procedure both as to gastro-intestinal tract and biliary and pancreatic systems.
4. *Chronic Appendicitis*—Henry Snure, M. D., 1501 South Figueroa Street, Los Angeles. What is meant by the term "chronic appendicitis." Brief review of roentgen ray findings compared to x-ray findings. Value of various signs and technique. Case reports of clinical cases of chronic appendicitis shown by roentgen ray examination to be due to other conditions.

THIRD MEETING

Sentinel Lobby, Village, Wednesday, May 20, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.
2. *Congenital Anomalies of Bones From Roentgen Standpoint*—W. B. Bowman, M. D., Brockman Building, Los Angeles.

   Congenital anomalies are a common cause of incorrect diagnosis of bone injuries, often being mistaken for fractures. Thorough knowledge of the various anomalies and supernumerary bones is essential in correctly interpreting roentgenograms. Differentiation between anomalies and bone injuries is an important factor, particularly in industrial work.
3. *Congenital Anomaly of the Rib Cage*—H. J. Ullmann, M. D., Cottage Hospital, Santa Barbara.

   Case presenting cervical ribs, no twelfth ribs, but normal number of vertebrae.

TECHNICAL SPECIALTIES SECTION

RAY LYMAN WILBUR, M. D., Chairman,
Stanford University, Palo Alto.

JOHN C. WILSON, M. D., Secretary,
1136 West Sixth Street, Los Angeles.

MEETING

Pillsbury Studio, Village, Tuesday, May 19, 8 p. m.

1. Election of Section Officers and Transaction of Other Section Business.

California Association of Physiotherapists

MISS SUSAN ROEN, President,
2422 Palm Drive, Los Angeles.

MRS. ALINE BRUMMELKAMP, Secretary,
507 Central Building, Pasadena.

Joint Meeting of Technical Specialties Section With California Association of Physiotherapists

1. President's Address and Secretary's Report.
2. *Physiotherapy in Conjunction With Glandular Ther-*

apy—Hans Lisser, M. D., 380 Post Street, San Francisco.

Discussion opened by William J. Kerr, M. D., University of California Hospital, San Francisco.

3. *Progressive Physiotherapy Treatment in Knee-joint Injuries*—Alfred Roncovieri, M. D., 870 Market Street, San Francisco.

Discussion opened by James T. Watkins, M. D., 909 Hyde Street, San Francisco; S. N. Jacobs, M. D., 209 Post Street, San Francisco.

4. *The Asthenic Child*—William P. Lucas, M. D., University of California Hospital, San Francisco.

Discussion opened by Florence Holsclaw, M. D., 380 Post Street, San Francisco.

5. *The Abuses of Physiotherapy in Industrial Accident Work*—W. C. Adams, M. D., 1904 Franklin Street, Oakland.

Discussion opened by E. I. Bartlett, M. D., 240 Stockton Street, San Francisco; E. W. Cleary, M. D., 177 Post Street, San Francisco.

6. Business Meeting.

California Association of Medical Social Workers

MISS EDNA J. SHIRPSER, President,
Children's Hospital, San Francisco.

MRS. SOPHIE H. MERSING, Secretary.
Mt. Zion Hospital, San Francisco.

MEETING

Pillsbury Studio, Village, Wednesday, May 20, 8 p. m.

1. President's Address and Secretary's Report.
2. *Problems and Progress in the Care of Drug Addicts*—Louise B. Deal, M. D., 69 Fair Oaks Street, San Francisco.

1. Formation of the Anti-Narcotic Section of the City and County Federation of Women's Clubs. 2. Appointment of the committee. 3. Drawing up of the program. 4. Educational campaign. 5. Drug addiction as a disease; (a) mechanism; (b) symptoms; (c) drug addict personally. 6. Drug addiction as regarded by the laity. 7. The accidental or innocent addiction—disease sufferers. 8. What can the physician offer? Three things—futility of all. 9. Saylor-Crowley bill No. 272. Creation of hospital for addicts.

Discussion opened by Eva C. Reid, M. D., 909 Hyde Street, San Francisco.

3. *Medical Social Service in Industry*—Margaret Paisley, Standard Oil Company, Richmond.

Discussion opened by Margaret T. Kyne, Market Street Railway, San Francisco.

4. *Principles Governing Free Medical and Hospital Service*—N. N. Wood, M. D., 1100 Mission Road, Los Angeles.

Discussion opened by Alfred C. Reed, M. D., 380 Post Street, San Francisco.

5. *Social Diagnosis*—Open discussion led by Miss N. Florence Cummings, Stanford Clinic, San Francisco.
6. *Medical Social Workers' Place in Improving Conditions of Mentally Diseased Patients*—Edward W. Twitchell, M. D., 909 Hyde Street, San Francisco.

Discussion opened by Joseph Catton, M. D., 209 Post Street, San Francisco.

7. Business Meeting.

UROLOGY SECTION

FRANK S. DILLINGHAM, M. D., Chairman,
Merchants National Bank Building, Los Angeles.

MILEY B. WESSON, M. D., Secretary,
Flood Building, San Francisco.

FIRST MEETING

Antler's Club, Village, Monday, May 18, 8 p. m.

1. Chairman's Address: *Unusual Urological Lesions*—Frank S. Dillingham, M. D., Merchants National Bank Building, Los Angeles.

Brief reports of three cases of fracture of the penis, one of priapism, one of anaphylaxis, and four of toxins from ascarides and oxyuris causing hematuria and albuminuria.

Discussion opened by Victor G. Vecki, M. D., 516 Sutter Street, San Francisco.

2. *Some Observations on Tuberculosis of the Kidney, With a Report of Interesting and Unusual Cases*—William E. Stevens, M. D., Flood Building, San Francisco.

Difficulties in diagnosis in the absence of tubercle bacilli in the urine or in the presence of tubercle bacilli and the absence of all clinical symptoms; roentgen ray diagnosis; the differential diagnosis of renal calculi and tuberculosis; putty kidney; renal tuberculosis in children; tuberculosis of the kidney during pregnancy; treatment in the presence of bilateral involvement; prognosis under surgical and non-surgical treatment.

Discussion opened by Nathan G. Hale, M. D., Capital National Bank Building, Sacramento.

3. *Some Experiences in Kidney Surgery*—H. A. Rosenkranz, M. D., W. P. Story Building, Los Angeles.

The incision of choice; intensive use of tonics in pre and post-operative treatment; the six-day pedicle clamp; prevention of fistula following nephrectomy of tuberculous kidney; avoidance of the five principal errors in technic; when removing a calculus, the severing of aberrant vessels that are probably responsible for stasis which causes infection that results in calculi; role of the teeth in kidney pathology; drainage and antisepsis of incision. Diagnosis of rarer conditions. A peculiar masked case of chronic multiple miliary abscesses surrounding pelvis requiring nephrectomy.

Discussion opened by G. W. Hartman, 999 Sutter Street, San Francisco.

4. *Bilateral Nephrolithiasis*—A. J. Scholl, M. D., Pacific Mutual Building, Los Angeles.

Conditions which determine the side to be first treated surgically; nephrectomy and later resection of one-half of remaining kidney; studies of urea retention directly after operation, during pregnancy, and two years after operation.

Discussion opened by Louis C. Jacobs, M. D., 870 Market Street, San Francisco.

5. *Treatment of Uncomplicated Acute Gonorrhea in the Female*—Harry W. Martin, M. D., Detwiler Building, Los Angeles.

Interpretation of title; former treatments unsatisfactory, as shown by large numbers of salpingectomies; douches, tampons, suppositories, vaginal painting, sprays; vaginal and urethral instillations of acriflavine and argyrol.

Discussion opened by Victor G. Vecki, M. D., 516 Sutter Street, San Francisco.

6. *Radiographic Diagnosis of Kidney Tumors*—L. R. Reynolds, M. D., 291 Geary Street, San Francisco.

Lantern slide demonstration of pyelograms and of the pathological specimens.

Discussion opened by Frank Hinman, M. D., 380 Post Street, San Francisco.

7. *The Mechanical Factors Involved in the Production of the Symptoms of Movable Kidney*—Charles P. Mathe, M. D., Phelan Building, San Francisco.

Occurrence of movable kidney; etiology, congenital predisposition, erect posture, peculiar body form, laxness and peculiar formation of renal fasciae, trauma; pathology; complications; symptomatology; diagnosis; treatment, non-operative and operative; results.

Discussion opened by P. A. Ferrier, M. D., Citizens Savings Bank Building, Pasadena.

SECOND MEETING

Antler's Club, Village, Tuesday, May 19, 2 p. m.

1. *Rupture of the Urethra—Value of an Early Diagnosis*—Louis C. Jacobs, M. D., Flood Building, San Francisco.

Frequency of occurrence; classifications; extravasated urine resulting from trauma and an infected urethra associated with stricture. Report of two

cases; etiology; pathology; symptomatology; and treatment.

Discussion opened by A. J. Scholl, M. D., Pacific Mutual Building, Los Angeles.

2. *Operative Treatment of Rupture of the Male Urethra* — Franklin Farman, M. D., 1501 South Grand Avenue, Los Angeles.

Report of two cases of extravasation of urine folfowing rupture of the posterior male urethra. Discussion of the immediate methods of handling such cases, prognosis and course. Description of technic and results obtained in secondary plastic repair of extensive urethral perineal fistula.

Discussion opened by A. J. Scholl, M. D., Pacific Mutual Building, Los Angeles.

3. *Effects of Prostatic Obstruction Produced Experimentally*—James R. Dillon, M. D., 516 Sutter Street, San Francisco.

Study of the pathological changes produced in the prostate, bladder, and kidneys; blood urea estimates at different periods; description of technic; conclusions. (Lantern Slides.)

Discussion opened by R. L. Rigdon, M. D., 291 Geary Street, San Francisco; E. W. Beach, M. D., Plaza Building, Sacramento.

4. *Results Obtained by Modification of Young's Perineal Prostatectomy*—Frank Hinman, M. D., 380 Post Street, San Francisco.

Description of modification: reasons for changes: (1) to secure better preservation of the external sphincter and (2) to insure more thorough and complete enucleation. Detailed comparison of 100 cases with results previously reported as having been obtained by the classical method. (Lantern Slides.)

Discussion opened by R. L. Rigdon, M. D., 291 Geary Street, San Francisco; E. W. Beach, M. D., Plaza Building, Sacramento.

5. *Suprapubic Prostatectomy* — Verne C. Hunt, M. D., Mayo Clinic, Rochester, Minnesota.

A discussion of indications for prostatectomy and conditions under which the graded operation is the one of choice; advantages of the one-stage operation; factors of safety and ultimate results.

Discussion opened by R. L. Rigdon, M. D., 291 Geary Street, San Francisco; E. W. Beach, M. D., Plaza Building, Sacramento.

6. *Complications Following Prostatectomy*—J. C. Negley, M. D., Haas Building, Los Angeles.

Immediate complications, hemorrhage, shock, acute dilatation of the heart, pneumonia, uremia, pyelitis, residual urine, incomplete enucleation, calculi, persistent sinus, dribbling, contracture of bladder neck.

Discussion opened by R. L. Rigdon, M. D., 291 Geary Street, San Francisco; E. W. Beach, M. D., Plaza Building, Sacramento.

THIRD MEETING

Antler's Club, Village, Wednesday, May 20, 2 p. m.

1. Election of Section Officers and Transaction of Other Section Business.

2. *Surgical Drainage of Prostatic Abscess*—Nathan G. Hale, M. D., Capital National Bank Building, Sacramento.

Various methods used in treatment in the past; foci of infection; symptoms; indications for operation; technic of operation; results with reference to symptoms; rectal findings, endoscopic examination and microscopical appearance of prostatic secretion. (Lantern Slides.)

Discussion opened by Franklin Farman, M. D., 1500 South Grand Avenue, Los Angeles.

3. *A Technic for the Treatment of Urethral Caruncle*—Paul A. Ferrier, M. D., Citizens Bank Building, Pasadena.

Frequency of urethral caruncle; importance as a cause of nervous symptoms; etiology; pathology; common methods of treatment and their unfavorable results; technic of a modification of Crenshaw's method; advantages; results. Demonstration of instruments.

Discussion opened by William E. Stevens, M. D., Flood Building, San Francisco.

4. *Chyluria*—A. A. Kutzmann, M. D., University of California Hospital, San Francisco.

Brief resume of the literature; etiology; pathology; clinical picture; diagnosis and treatment. Report of a case.

Discussion opened by J. C. Negley, M. D., Haas Building, Los Angeles.

5. *Urinary Tract Involvement of Poliomyelitis* — Henry A. R. Kreutzmann, M. D., 1195 Bush Street, San Francisco.

A discussion of nerve lesions of the bladder in general; a resume of the various theories of micturition; report of a case of infantile paralysis involving the bladder.

Discussion opened by C. P. Mathe, M. D., Phelan Building, San Francisco.

6. *Autonephrectomy—Report of Animal Experimentation in an Effort to Produce Enclosed Renal Lesions*—L. P. Player, M. D., 380 Post Street, San Francisco; F. H. Redewill, M. D., University of California Hospital, San Francisco.

Review of literature. Rabbit experimentation to determine production of enclosed renal lesions with tubercle bacilli, etc., through blood and lymph channels and by direct extension along the ureters; report of an unusual case of walled-off cortical and medullary parenchyma with patent ureter and pelvis of kidney. (Lantern Slides.)

Discussion opened by James R. Dillon, M. D., 516 Sutter Street, San Francisco.

7. *A Safe and Accurate Method of Removing Small Obstructions at the Vesical Orifice Under Observation With the High Frequency Electrode*—Martin Molony, M. D., 1056 Sutter Street, San Francisco.

This method requires accuracy of diagnosis and permits the removal of the exact tissue desired. It is simple, accurate, effective, and devoid of danger.

Discussion opened by Henry A. R. Kreutzmann, M. D., 1195 Bush Street, San Francisco.

ANNUAL MEETING OF THE WESTERN BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION

CHARLES P. MATHE, M. D., President,
Phelan Building, San Francisco.

GEORGE W. HARTMAN, M. D., Secretary,
999 Sutter Street, San Francisco.

Antler's Club, Village, Wednesday, May 20, 8 p. m.

1. *Carcinoma of Urachus—Report of Case and Review of Literature*—H. W. Howard, M. D., Portland, Oregon.

2. *The Treatment of the Ureter in the Surgery of Tumors of the Bladder*—Verne C. Hunt, M. D., Mayo Clinic, Rochester, Minnesota.

A discussion of the relation of tumors of the bladder and the ureters. The ultimate results in the ureter and kidney of the various methods of treating the ureter. Indications for choice of the several procedures and comparison of the relative value of such procedures based on ultimate results.

3. *The Bloodless Removal of Stones from the Ureter*—Charles S. Vivian, Phoenix, Arizona.

Consideration of the formation of stones in the ureter. Consideration of the methods employed for removal; consideration of stones which may be expected to be expelled spontaneously; those which require bloodless methods and those which require surgical removal. Presentation of slides illustrating various conditions. Summary and conclusion.

4. Election of Officers and Business Meeting.

Utah State Medical Association

SOL G. KAHN, Salt Lake City.....President
WILLIAM L. RICH, M. D., Salt Lake.....Secretary
J. U. GIESY, Kearns Building, Salt Lake City,
Associate Editor for Utah

BOVINE MEANS BULL

In their action on the Hammond amendment, the present legislature has given the *coup d'grace* to one of the cults in Utah, namely, the Abramsites. From current press accounts of the final few moments preceding the vote, they would appear to have been as full of humor as the Abrams method of diagnosis itself. This would indicate that the house enjoyed a sort of three-ring circus, before voting against the further untrammeled freedom of the bovinites.

Speaking of bovine, we are filled with speculation. There was Jenner, and we know what he did with the dairy maids of England and the cow-pox vesicles and pustules on the patient English milk cows' teats. Big pox and small pox. Is it possible that while the cows were inoculating the dairy girls with the latter, the maids may by any chance have returned the compliment with what in Jenner's day and before was known as the French disease? Can this be the source of "bovine syphilis"? We don't know. Like Tutankamen, the thing is buried in the past, and we never knowingly saw a syphilitic cow in our life.

Yet there is that word "bovine." *De mortuis nil nisi bonum.* And yet we wonder if by any chance Abrams may himself have been a humorist—if perchance he may have realized at times how closely "bovine" and "bull" are related. In the words of Hashimuro Togo, "it is to ask."

OUR OWN DOORSTEP

Damage suits against doctors, like any other phenomena of life, taken individually or collectively, have a cause. And in this age, when the bringing of such suits has come to be so largely a favorite variety of indoor sport with a certain class of both patient and attorney, it behooves the medical world to take stock of itself, in order to learn if perhaps something of that cause may not be found within its own ranks. As a matter of fact, it is within the ranks of the profession that such cause often really lies. The fault which so ofttimes acts as an inciting spark to the explosion of such a suit against one of our own number too often lies on our own doorstep as a particularly obnoxious sort of dirt. And the reason why this is true, is a reason as old as human nature itself.

It is so easy to criticize. Criticizing is almost as easy as making mistakes. Yet criticism should be justly deserved before it is voiced. And to criticize justly one should be in possession of all major as well as all contributing facts. Here lies the rub. How many medical men, before expressing an opinion as to the work of some colleague, take time to fully investigate? I don't know the answer. Anyone who does may speak. Judging by results, however, the percentage is not large. Were it larger, there would be a dwindling number of suits.

I honestly believe that the average physician does always the best he may for his patient. Only a fool would not. Yet aside from that fact as applyling to the doctor's individual prestige, I honestly believe that the average doctor is inspired for and toward his patient's welfare. And what cachet have I to say he is not? We who practice the medical art know how much may contribute to a failure or result, aside from the doctor's own work or advice—things the patient fails to either confess or take into consideration when suit is brought. But certainly all of us should take such things into consideration before we criticize another man's result. Ignorance may to a degree excuse the patient, but surely—surely, ignorance of such things can be no excuse for us, because such ignorance is not ours.

Recently it has been my pleasure to land such a suit in the ash-can, so to speak. The attending physician did his work cleanly, correctly, and the work was undone by a "visiting" nurse employed by an industrial concern who undertook to do her stuff. The industrial physician was stated by the patient to have said the medical man's work had been wrong. Yet the industrial physician made a mistake. The case was an instance of allergy, pure and simple, manifested through an application made to the patient's body by the nurse. Yet suit was quite possible in this instance. And suits hurt any of us, even though a decision favorable to us is the result.

Recently, too, it was my pleasure to refuse to testify in a case being brought. Here, after investigation, I informed the attorney for the plaintiff that my testimony would be inimical to his client's interests. The final judicial decision supported this contention. The plaintiff lost.

These instances are cited merely to point the moral of sweeping our own doorstep first. It's the old story of casting stones. So many of us, if we look into our own past, will find that we equally dwell in houses of glass. It's so easy to see the mote in the eye of our neighbor, but—haven't we maybe a flag pole or two in our own optics? The chances are that we have. Somebody with a sense of humor and a trace of philosophy in his make-up recently remarked that the Christian nations would thrive better when they began to practice Christianity. Something of the same thing applies to us. Why criticize one another? Why cast slurs or aspersions on another's work? And especially why do it to a layman, who will misunderstand and broadcast his misunderstanding far and wide to the injury not only of the one whom we have decried to him, but of our profession at large? Why in the name of common sense, common decency, commercial advantage, justice, fairness, even self-defense, cast stigmata—unless provenly deserved—upon any member of the profession which we have made ours?

Utah Notes (reported by J. U. Giesy, associate editor) —As a result of recent elections in the component socie-

ties, the following members are now officers of those societies as follows:

Box Elder County—Richard A. Pearse, president; W. LeRoy Smith, secretary-treasurer.

Cache Valley County—Eugene Worley, president; G. L. Rees, secretary-treasurer.

Carbon County—R. E. Dowd, president; J. M. Simpkin, secretary-treasurer.

Uintah County—M. Garrett O'Donnell, president; Homer E. Rich, secretary.

Utah County—J. W. Hagen, president; Arnold Robinson, secretary.

Salt Lake County—John Z. Brown, president; M. M. Critchlow secretary.

Weber County—E. M. Conroy president; R. L. Draper, secretary-treasurer.

The following speakers have accepted the invitation of the state association to the annual meeting:

Dr. Carla Hamman, Surgery, Cleveland; Dr. Ernest Sachs, Neurological Surgery, St. Louis; Dr. W. F. Braasch, Genito-Urinary Diseases, Rochester, Minn.; Dr. Carman, X-ray, Rochester, Minn.; Dr. Eusterman, Internal Medicine, Rochester, Minn.; Dr. Martin Engman, Dermatology, St. Louis; Dr. W. C. Alvarez, Internal Medicine, San Francisco; Dr. G. D. Stewart, Surgery, New York City.

This is an indication of what the program will be and what those who attend the state meeting may expect to receive. The committee on program are to be congratulated on having secured such an exceptionally desirable list of speakers. Let every member who possibly can begin now to so lay his plans that he may attend.

Senate Bill No. 9, after a somewhat uncertain gestation in the course of which it at one time seemingly died, only to be later revivified, finally became a stillborn product of legislative conception in the closing hours of the legislature. The enacting clause was stricken in the house. For this the general public, whether aware of the fact at present or not, should give the lower body of the legislature their sincere thanks. Bill No. 9 was the pet measure of the chiros, which would have enabled them to treat industrial accident cases, under Commission control. While medically speaking, the enactment of such a measure would perhaps have resulted in no more than a demonstration of the effects such methods of treatment applied to traumatic injuries might be expected to produce, yet one wonders just what those results might have proved in the case of a traumatic spine, for example, as affecting the individual case. Viewed in that light, it is unlikely that the fate of Senate Bill No. 9 will cause any member of the medical profession to weep.

Salt Lake County Medical Society (reported by L. J. St. Paul, acting secretary)—The meeting held February 23 was called to order by President John Z. Brown. Members present, twenty-two; visitors, two.

W. R. Calderwood read a paper on "Causes and Methods of Prevention of Apoplexy." His data were taken from his own practice, in connection with insurance records to which he has access. He emphasized the importance of toxemia in the G. I. tract, and of stimulants, such as alcohol, coffee, and tea, as important causes.

T. F. H. Morton read a paper on the "Treatment of Climacteric Symptoms." He emphasized the importance of surgical removal of all foci of infection in the region of the cervix peritoneum and pelvic cavities, as well as glandular therapy. These papers were discussed by T. C. Gibson, Sol G. Kahn, and G. H. Pace.

The application of C. H. Hobbs was read and referred to the board of censors. Sol G. Kahn, chairman of the Committee on Public Health and Legislation, reported on the activities of the state legislature to date, so far as that related to the profession.

The regular meeting of March 9 (reported by M. M. Critchlow, secretary) was called to order by President John Z. Brown, forty-five members and one visitor being present.

The scientific program was arranged by the Ophthalmological Society. F. Leaver Stauffer read a paper on "Paranasal Sinus Disease in Children." He emphasized the frequency of this condition, discussed the etiological factors, anatomy of the sinus, symptoms, complications, diagnosis, and treatments. E. M. Neher read an instructive paper on "Ocular Headaches and Their Diagnosis," and described the anatomy and physiology of the eye and fifth cranial nerve. He discussed the differential diagnosis of headaches and described the treatment. W. D. Donoher presented the subject of "General Practitioner and Specialist." He emphasized the harm that may be done to a patient by improper operations about the eye, ear, nose and throat, and discussed the proper method of moving foreign bodies from the cornea and the necessity of accurate diagnosis for eye conditions before treatment is adopted. He deprecated the fact that much unnecessary surgery of the nose and throat is done, and described what should be the limitations of the dentist's field. He stressed the clean and complete removal of tonsils only when such an operation is indicated. These papers were discussed by L. W. Snow and A. L. Brown.

President Brown suggested that the society have a committee to supervise public lectures, the function of which would be to provide speakers from the society for health talks, at the request of lay institutions, to pass upon outside speakers giving public lectures of health and to supervise weekly health talks over the radio. Discussed by F. H. Raley and W. G. Schulte. M. M. Critchlow moved that a committee to supervise public lectures consisting of three members be appointed. Discussed by T. F. H. Morton. Seconded and carried.

The application for membership of C. H. Hobbs was voted upon and he was unanimously elected to membership, thirty-five members voting.

Nevada State Medical Association

W. M. EDWARDS, M. D., Mason.....President
CLAUDE E. PIERSALL, M. D., Reno.....
Secretary-Treasurer and Associate Editor for Nevada

Washoe County Medical Society (reported by Henry Albert, secretary)—The Washoe County Medical Society met in regular session in the rooms of the Chamber of Commerce March 10, President Vinton A. Muller presiding.

The minutes of the previous meetings of February 9 and February 13, 1925, were read and approved.

C. E. Piersall read a paper on "Ultra-Violet Therapy." He discussed the diseases in which actinic rays are especially helpful and the advantages of artificial light over sunlight.

Clain Fanning Gelston of San Francisco presented a paper on "Lipiodal Injections With Radiology of the Bronchial Tree in Children." The material injected is a vegetable oil, to which a certain amount of iodine has been added. Its value in localizing pathological processes and as a guide to treatment, especially surgical, was discussed. The paper was illustrated with lantern slides, and was discussed by Robinson, Morrison, Bath, and Piersall.

V. A. Muller demonstrated a stomach tube which was used at Nevada City, Calif., in September, 1856, to empty the stomach of John Wilkes Booth after he had been on a drinking spree.

The automatic syringe was rather elaborate in its construction.

On motion, the society was instructed to negotiate with Dr. J. LaRue Robinson with regards to the purchasing of the projection lantern which he had kindly permitted the society to use during the past year. Dr. Robinson thereupon announced that he presented the lantern to the society. The president thanked Dr. Robinson on behalf of the society, and instructed the secretary to take charge of the lantern.

Attendance—Members: Albert, Barrows, Bath, Caples, DaCosta, Fuller, Morrison, Muller, Richardson, Piersall, Robinson, Servoss, Stadtherr, and West.

Medical Economics and Public Health

Nationalize! Centralize! These seem to be the slogans of individuals who do not understand what the fundamental American system is, and who would like to change our system after a foreign pattern. Why, we fought the Revolution to escape a concentration of power unwisely used. Our forefathers were determined that they would make no such mistakes in America. Power was to be wisely distributed and jealously guarded.—United States Senator Overman.

As a Prominent Attorney Sees It—The prevailing multiple standard statutes put the cart before the horse. They have been framed under the high pressure of selfish, thoroughly organized, extravagantly paid lobbies of one idea and one purpose that persistently throng legislative chambers and propagate error, seeking means for their own profit through improvident legislation, substantially unopposed by any sufficiently organized rival force devoted zealously to supplying to legislators correct information upon the serious subjects involved. The ill-prepared doctor who becomes the champion of low standards is commonly engaged in trying to perpetuate his existing means of livelihood without further preparations, and, therefore, spends his money lavishly, devotes all of his time if necessary, and fights hard to win. The skilled doctor who becomes the advocate of reasonable standards is commonly working against his own interest, impelled by an earnest desire to protect the public health and to make his profession honorable, learned, and efficient. But the issue does not involve his bread-and-butter pursuit. He, therefore, presents his information, offers his advice, and departs. His adversaries stay on the job.—H. E. Kelly, Chicago.

The nurse inspects the child, no longer to find defects, but rather to find the normal, and if not normal to find out why and seek a way to attain normality.—Elnora E. Thomson, R. N. (Pacific Coast Journal of Nursing).

"Physicians, with the same justification that urged them to sponsor health safeguards, may object to health departments arrogating to themselves the field of private practice," says the Ohio Medical Journal editorially. "Health departments were established to safeguard public health and educate the public. Health departments were not established to furnish wholesale medical service to the general public, whether it be diagnostic, treatment, or after care.

"The diagnosis, treatment, and after care of patients is the duty of the private physician. Such is the field of private practice. Encroachments upon this field by health agencies is a step in the wrong direction and one which eventually will augur to the discredit of the health department through a loss of popular support of its policies.

"When the private field of medical practice is invaded by government, free medical service is rendered. There is no more reason for this than free groceries, hardware, or a thousand other material things which life demands. Recognized exceptions are, of course, proper educational health efforts and care of the indigent and public wards."

"Public opinion is today perhaps more critical of physicians than at any time in the past, not excepting Molière's day," says David Riesman (A. M. A. Bulletin). "Even some of the leaders in medicine are saying harsh things, to my mind not quite justified, of the rank and file of our profession. Our work is being scrutinized; we are held answerable in many directions.

Choice of Physicians by the Employe—The question whether the employer or the employe shall have the right to choose the physician has no essential relation to the theory underlying the workmen's compensation acts. The expense of treatment can be equally well charged to industry and ultimately paid by the consumer, no matter who makes the choice. Presumably, the workman who has freedom of choice will procure the best medical services available, and no one has ever yet proposed that, in the exercise of his right to choose, the workman shall be debarred from choosing any medical service the employer may provide. The employer, then, who insists that the workman shall not be given freedom of choice is in the position of contending: (1) That the workman is willing to submit himself knowingly to inferior medical treatment in order to obtain the services of a physician whom he believes is not biased in favor of the employer; (2) that the workman is too stupid to choose the best service even when it is placed before him, or (3) that the service offered by the employer is not the best, but must be forced by law on the unwilling employe. As a matter of fact, to allow injured workmen to choose between the medical service offered by an employer and the medical service obtainable elsewhere should stimulate a healthy competition for excellence of service in the plant and among competing physicians, and thus result in the maintenance of the highest possible grade of professional services in the community.—W. C. Woodward, M. D. (A. M. A. Bulletin).

Physicians on Compensation Commissions—The decisions of most commissioners or deputy commissioners who are not physicians will frequently reflect their lack of medical knowledge.

To remedy this situation, the compensation commission must have one medical member. Until such time as adequate remuneration is paid by the state for such service, this may be hard to accomplish, but it should be insisted on by the various state medical societies; and when proper medical relations are established between the employer and the employe, and with the compensation commission, inadequate legislation can of a certainty be corrected.—L. H. Childs, M. D. (A. M. A. Bulletin).

Life Insurance Without Medical Examination—Because, it is said, of improvements in health of its policyholders, the Prudential Insurance Company is now considering applications, without medical examinations, for additional ordinary insurance, on the life of any policyholder up to and including 45 years of age, on whose life an ordinary policy has been issued at standard rates with full medical examination within twelve months prior to the application for new insurance. The amount may be up to $10,000, but must not exceed the amount of the preceding policy, except where it was for only $1000. In that event the new policy may be for $2000. This concession also applies to policies on the lives of women.

District of Columbia Gets Disease Control Law—After five years of legislative history the venereal disease control bill for the District of Columbia was signed by the President on February 26. In spite of the fact that the bill has been on the verge of enactment at several times in the past, it did not become law until the closing days of the last session of the Sixty-eighth Congress, although every state in the Union has had some sort of a venereal disease control measure since 1921. The fact that sentiment for the Gilbert bill persisted for so long a time in the face of repeated legislative delays goes to show that the need for such a measure was keenly felt by residents of the District.

Under the provisions of the law, the chief officer of every hospital, dispensary, sanitarium, and penal institution must report to the health department cases of venereal disease as soon as they are discovered. The judges of the juvenile and criminal courts must report any persons appearing before them who are suspected of being venereally infected. Private physicians are required to make a similar report within ten days after a case has come under their control. The District law provides that these reports be kept confidential by the health officer and his agents. According to the Division of Venereal Dis-

eases of the United States Public Health Service, all of the states now have regulations requiring such reporting of cases of venereal disease.

In common with the regulations of thirty-five states, the District act provides that prostitutes, keepers of disorderly houses and persons convicted of any sexual crime are presumed to be a source of infection and are subject to examination. The health officer is required to employ for the protection of public health all such regulatory measures as may be necessary to prevent the spread of these diseases. He is also required to use every available means to ascertain the existence of venereal disease and the source of the infection. Persons against whom there is no criminal charge, but who are reasonably suspected of being infected, may be examined by the health officer upon consent of the parties. If, however, such persons withhold consent, an examination may be ordered by the court. A violation of such an order by continued refusal is punishable as contempt of court. In forty-three of the states the health officer is given express power to quarantine persons known to be infected with venereal disease. Nine of these states go even further, allowing the officer to placard the premises under certain conditions.

Twenty-nine states have laws which prohibit the advertising of preparations for the treatment of venereal diseases in lay publications, or which prevent the sale of such medicine to a lay person except on the prescription of a licensed physician. A like clause exists in the District law. Nineteen states have found it advisable to regulate the employment of the venereally diseased, and in the District of Columbia the law prohibits persons suffering from venereal disease, in a form likely to be a source of infection to others, from being employed as barbers, masseurs, cooks, bakers or other producers or handlers of food or drink, or from working in any other occupation in which the disease might endanger the public health.

Under the new law, it is compulsory upon physicians to advise their patients as to measures which they should take to prevent the spread of these diseases. They are also required to report all of the indigent cases which may come to their notice. The board of health is under obligation to take care of such cases and to see that they are given the proper treatment according to approved standards. Practically all of the states have some way of taking care of such indigent cases.

Four Recovered Lepers Discharged From National Leprosarium — The conditions under which lepers are released from this institution are exceedingly rigid. They require special observation for a period of one year, including monthly bacteriological examinations, to show that the leprosy bacillus is absent from the tissues. Certification of cure is also required from a board of three medical officers stationed at the hospital and experienced in leprosy.

The treatment at Carville includes the use of chaulmoogra oil, special preparations of mercury used intravenously, x-ray therapy, surgery of superficial areas of involvement, hydro-therapy, and the violet ray. The results of treatment have been sufficiently encouraging at this institution to induce numerous other patients, of whom there are believed to be several hundred in the United States, to agree to their transfer. A special car fitted up for the purpose, and carrying a doctor and a nurse, was used in the transfer last week of eleven patients from Florida, and seven were brought from California. There are at present 236 leper patients at Carville.

Good Advice—Do not get too deeply absorbed, to the exclusion of all outside interests. Success in life depends as much upon the man as upon the physician. You are to be members of a polite as well as of a liberal profession, and the more you see of life outside the narrow circle of your work, the better equipped you will be for the struggle.—Osler.

Medicine Before the Bench

Findings and Comments of the Courts on Acts and Omissions of Doctors

(EDITOR'S NOTE—*The law reports contain many interesting decisions, involving the reputations and fortunes of doctors. In this column in each issue a brief summary of one or more decisions and comments of the several courts of last resort upon the cases will appear. The matter will be selected by our general counsel, Hartley F. Peart, who, with Hubert T. Morrow, attorney for Southern California, will contribute from time to time.*)

In a comparatively recent decision the plaintiff, a child of 5 years of age, brought suit against a physician claiming that he had negligently diagnosed her condition and applied improper treatment. It appeared that plaintiff had sustained a fall, by reason of which a fracture to the hip resulted. The bone of the leg near the ankle-joint was also split. A few days later it developed that plaintiff was also suffering from osteomyelitis. The defendant failed to discover the fracture to the hip, but applied tight bandages and a cast on the fractured ankle. The plaintiff alleged that defendant "unskillfully placed said limb, which was then sore, swollen, tender and inflamed, in a plaster of paris cast and negligently made the same so tight as to greatly impede and stop circulation; that because of said treatment mortification set in, and a septic condition and blood poisoning resulted, extending throughout her whole body," making subsequent operations necessary to save the plaintiff's life. A verdict was rendered by the jury in favor of the plaintiff, and upon appeal therefrom the court in affirming the judgment said:

"It is the duty of a physician or surgeon to use that reasonable care and diligence ordinarily exercised by members of the profession in similar cases under like conditions, and failure so to do constitutes negligence on his part.

" . . . In other words, the implied obligation of the physician or surgeon to his patient is that no injurious consequences shall result to him from want of proper learning, skill, care, and diligence."

With respect to the contention of the defendant physician that since he was highly trained in his profession and, in fact, possessed all the necessary care and skill qualifying him to practice his profession, the verdict could not stand, the court continued:

"The question of negligence, or failure to exercise ordinary skill and care in the treatment of any particular case does not depend upon the professional skill and learning of the physician, but is to be determined from a consideration of his acts, conduct, omissions, and treatment in the particular instance. If he possessed the highest degree of skill and learning in his profession, and failed to exercise the care and diligence required by the law in treating his patient, his skill and learning could not shield him from the consequences of such negligent treatment. On the other hand, if he did not possess the skill and learning required by the legal standard, but his treatment in the particular instance was proper, he could not be held liable for the want of such skill which resulted in no injury to the patient. . . .

"We have examined the questions presented in relation to the evidence and instructions given and refused, and find no reversible error. The judgment is affirmed."

Bryan to the Contrary Notwithstanding—The *moral* principle inherent in evolution is that nothing can be gained in this world without an effort; the *ethical* principle inherent in evolution is that the best only has the right to survive; the *spiritual* principle in evolution is the evidence of beauty, of order, and of design in the daily myriad of miracles to which we owe our existence.—Henry Fairfield Osborn (The Forum).